DOCUMENT RESUME

ED 160 820 08 CE 017 977

AUTHOR	Legacy, James; And Others
TITLE	Competency Based Curriculum for Agricultural Occupations Programs--Phase I--Developing an Occupational Matrix and Completing a Job Title Purposive Study. Final Report.
INSTITUTION	Southern Illinois Univ., Carbondale.
SPONS AGENCY	Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.; Illinois State Office of Education, Springfield. Div. of Adult Vocational and Technical Education.
PUB DATE	78
NOTE	147p.; Not available in hard copy due to reproducibility problems
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	*Agricultural Occupations; Curriculum Development; Field Interviews; Field Studies; Horticulture; Interviews; Job Skills; *Matrices; *Occupational Surveys; Performance Based Education; *Research Methodology; Secondary Education; State Surveys; *Task Analysis; *Validity
IDENTIFIERS	Illinois

ABSTRACT

This study was the first phase of a three-phase study to develop, adopt, and implement competency based curriculum for Illinois agricultural occupations programs at the secondary level. As a procedural field test, phase I developed an occupational matrix for one of the U.S. Office of Education agricultural occupation program areas (horticulture) and tested task analysis validation procedures (purposive study) for one job title area--retail florist. The horticulture matrix (a listing of job titles, business titles, and business area titles which comprise the industry) was accomplished by the listing of job titles assembled by a literature search and by the advice of an advisory committee, and then correcting them through telephone interviews with 138 businesses in the Illinois horticulture industry. The purposive study was conducted to validate the retail florist job title list of tasks for the geographic area (Illinois); data was obtained from a series of sixteen personal interviews. The occupational matrix findings revealed significant differences between the pre-interview and telephone interview data. The results of the retail florist study suggested that beginning employees require training in the areas of sales, delivery, and design--while present curriculum emphasizes only the design element. For competency based curriculum development work in the other agriculture occupations areas, it is recommended that an occupational matrix be verified by field contact, and that the purposive study phase be included. (JH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED160820

FINAL REPORT

COMPETENCY BASED CURRICULUM FOR AGRICULTURAL OCCUPATIONS PROGRAMS - PHASE I - DEVELOPING AN OCCUPATIONAL MATRIX AND COMPLETING A JOB TITLE PURPOSIVE STUDY

RFP CODE
4.1.11

DAVTE FUNDING AGREEMENT NUMBER

RD3-A8-590

CE 017 977

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

PROJECT DIRECTOR:

JAMES LEGACY

PROJECT CO-DIRECTORS:

THOMAS STITT
EUGENE WOOD

INSTITUTION:

SOUTHERN ILLINOIS UNIVERSITY/CARBONDALE

ABSTRACT FOR FUNDING AGREEMENT
WITH ADULT, VOCATIONAL AND TECHNICAL EDUCATION

TITLE: Competency Based Curriculum for Agricultural Occupations Programs - Phase I - Developing an Occupational Matrix and Completing a Job Title Purposive Study

PRINCIPAL INVESTIGATOR(S): Dr. Eugene Wood, Dr. James Legacy and Dr. Thomas Stitt

INSTITUTION: Board of Trustees of Southern Illinois University

LOCATION: Carbondale, Illinois 62901

OBJECTIVES OF PROJECT:

1. A horticulture job title matrix listing in a systematic format the job titles in horticulture.
2. A validated listing of tasks for one job title. A purposive study will be the process to accomplish this activity.
3. A documentation of procedures which are effective in implementing V-TEC's in Illinois vocational programs.

PROCEDURES OF IMPLEMENTATION:

1. Establish procedures in compliance with V-TEC's.
2. Form the advisory committee
3. Prepare a job title survey
4. Formulate the horticulture matrix
5. Conduct the job title survey
6. Review and modify the job title survey
7. Identify working committee for purposive study
8. Establish task rejection criteria
9. Purge task list
10. Working committee identify core tasks
11. Survey job incumbent personnel
12. Jury review of tasks
13. Final report of matrix and purposive study to DAVTE

CONTRIBUTION TO VOCATIONAL AND TECHNICAL EDUCATION: The uniqueness of this study is in the newness of these products to the curriculum development process in Illinois. Currently a horticulture curriculum matrix does not exist for Illinois. Similarly, a purposive has not been completed in Illinois. The results of this project will provide a firm foundation for future curriculum development activities in this area and also provides a guide for curriculum development in other vocational disciplines.

ACKNOWLEDGEMENTS

This project was supported by a grant from the Illinois Office of Education, Department of Adult, Vocational, and Technical Education.

Appreciation is expressed to the project's steering committee members and to the graduate research assistants who collected the study's data. Finally, the responses of 216 Illinois horticulture businesses which facilitated completion of the project are acknowledged with sincere appreciation.

A special thank you to the steering committee.

Mr. Bernard Colvis	Colvis Orchards R. R. #2, Box 374 Chester, IL 62233
Mr. Rodney Anderson	Anna Nursery Company 6155 Main Street Anna, IL 62906
Mr. Tom Rapp	Beck Area Vocational Center R. R. #3 Red Bud, IL 62278
Mr. J. W. Courter	U of I Experiment Station Simpson, IL 62985
Ms. Sheryl Gueldenhaar	Wisely Florists Carbondale, IL 62901
Mr. Alan Utech	Agricultural Consultant Illinois Office of Education Springfield, IL

Advisory Committee
Mrs. Herbetta Beyler
Dr. Irwin Hillyer
Dr. Raymond Maleike
Mr. Greg Pierceall
Dr. Herbert Portz

Graduate Student Staff
Mrs. Ruth Alliband
Mr. Floyd Bennett
Ms. Sheryl Gueldenhaar
Ms. Amy Swigart

FINAL REPORT

COMPETENCY BASED CURRICULUM FOR AGRICULTURAL OCCUPATIONS PROGRAMS - PHASE I - DEVELOPING AN OCCUPATIONAL MATRIX AND COMPLETING A JOB TITLE PURPOSIVE STUDY

by Legacy, Stitt and Wood

ERRATA

1. Page 14, Line 2, should read;

   each business title. See sample map Figure IV. These maps are attached as Appendix A.

2. Page 28, Table IV should read:

Totals columns	Totals
Business types entry should be	23
Number of preliminary job titles entry	180

TABLE OF CONTENTS

ACKNOWLEDGEMENTS iv

LIST OF TABLES vii

LIST OF FIGURES. viii

PREFACE. ix

CHAPTER

I. INTRODUCTION. 1
  The Need for Competency Based Teaching Materials. 2
  Vocational Agriculture Occupations Curriculum 2
  Purpose of the Project. 3
  Objectives of the Matrix Development. 5
  Objectives of the Purposive Study 6

II. DEVELOPMENT OF AN OCCUPATIONAL MATRIX 7
  Introduction. 7
  Planning Using a Functional Schematic and PERT Technique. . . . 7
  Matrix Process. 7

III. CONDUCTING THE PURPOSIVE STUDY. 17
  Introduction. 17
  Planning Using a Functional Schematic and PERT Chart. 17
  Developing the Task List and Interview Form. 17
  Pre-Testing the Interview Form. 21
  Identifying the Geographic Area to Interview. 22
  Selection of Florists to Interview. 23
  Conducting the Interviews 26

IV. RESULTS 27
  Part I - Matrix Data. 27
  Part II - Purposive Study Data. 29
  Organizing Task Data for Curriculum Development 35

V. FINDINGS AND RECOMMENDATIONS. 41

VI. APPENDICES. . . . .

Appendix A - Business Title Distribution Maps 43
Appendix B - List of Business Areas and Business Types. 63
Appendix C - Preliminary List of Job Titles 65
Appendix D - Telephone Interview Form 71
Appendix E - Occupational Matrix of Illinois Horticulture 75
Appendix F - Purposive Study Interview Forms. 86
Appendix G - Steering Committee Materials 100

LIST OF TABLES

TABLE I - Counties Where Interviews were Conducted . . . .

TABLE II - Data From Task Analysis of Floral Shops . . . .

TABLE III - Rank of Task Importance. . . . .

TABLE IV - Summary of Illinois Horticulture Job Titles . . . .

LIST OF FIGURES

FIGURE I - Functional Schematic. . . . .

FIGURE II - Matrix PERT Chart. . . . .

FIGURE III - Purposive Study PERT Chart. . . . .

FIGURE IV - Purposive Study Interview Map. . . . .

10

PREFACE

In February, 1978, the Agricultural Education Staff at Southern Illinois University, Carbondale, Illinois, began a study of procedures which would lead to the development of a system of Competency Based Vocational Education.

The project which was funded by the Illinois Office of Education provided: (1) information which will facilitate the development of competency based teaching materials for the horticulture area of vocational agriculture, and (2) procedural models for conducting a purposive study and building an occupational matrix. These results are found in this report and in part in a publication titled "Horticulture Education in Illinois". The primary purpose of the publication "Horticulture Education in Illinois" was to disseminate the findings of the Horticulture Matrix to Illinois schools. This, the final report, presents the methods and steps which are necessary to develop an occupational matrix and conduct a purposive study. The reasons for reporting the procedural methods were to (1) provide a basis for confidence in the study's findings, and (2) to facilitate replication of the study.

CHAPTER I

INTRODUCTION

One of the most important aspects of vocational education is that the training provided is relevant to the work world. It is necessary for those persons who are planning and conducting vocational programs to be continually aware of the technical changes occurring in the occupational area within which they work.

Since the passage of the Vocational Educational Act of 1963 and the subsequent amendments of 1968, Agricultural Occupation's programs in Illinois have been in a state of transition. The National Advisory Council on Vocational Education has encouraged the use of Federal Funds for the establishment of programs in new career areas, specifically naming horticulture as a priority. Today's programs prepare students for jobs in a wide variety of specialized occupations. Current program transition is in response to the rapidly changing technology of Illinois Agribusiness industry. To maintain their effectiveness, Illinois programs of vocational education need to develop a curriculum which is responsive to the changing needs of Illinois industry.

Development of curriculum in vocational education has lacked a systematic approach in Illinois. Current emphasis in job title and worker or industry job analysis has motivated curriculum developers in vocational education to begin systematic competency based curriculum development. The purpose of this project is to begin systematic development of an Agricultural Occupation's curriculum which is based on the needs of Illinois agribusiness industry.

THE NEED FOR COMPETENCY BASED TEACHING MATERIALS

The current curriculum of local vocational programs is not based upon a systematic approach to meet the needs of Illinois employers. Some individual teachers (normally experienced) have developed good curricula for their local schools. However, inexperienced teachers or experienced teachers lacking motivation, time or ability to develop good curricula are hampered by a lack of a standard curriculum.

State supervisory officials and university personnel are plagued by lack of systematically developed teaching materials for use in working with local schools or in preparing teachers for local schools. School officials are often puzzled regarding the appropriateness of the agricultural curriculum in their schools.

VOCATIONAL AGRICULTURAL OCCUPATIONS CURRICULUM

Competency Based Curriculum Development in the Agricultural Occupations Program area is based on several principles.

1. The vocational occupations program is a four-year program beginning at grade nine and continuing through grade twelve.
2. Program content is based on the USOE's occupational[1] areas of agriculture and the competencies that are needed within each of the areas.
3. Completion of an occupational program results in entry level employment.
4. Job preparation is based on the development of good work habits as the foundation of vocational education.

The following program is outlined to provide for this type of vocational agribusiness curriculum:

---

[1] The eight USOE recognized agricultural occupations program areas are a) agricultural production,)b agricultural mechanics, c) agricultural supplies and services, d) agricultural products, e) horticulture, f) agricultural resources, g) forestry, and h) other agriculture.

First year: Core of common content competencies necessary for all Agricultural Occupation's students regardless of occupational cluster choice, (task analysis models call these cluster core tasks).

Second year: Common competencies concerning agribusiness which is structured for particular occupational clusters, (task analysis models call these sub-cluster core tasks).

Third and Fourth year: Specific competencies; agribusiness job title area and specific job titles (task analysis models identify these as category core, sub-category and job title tasks).

This project is designed to adapt current task analysis concepts to fit the characteristics of Illinois Agricultural Occupations programs. The result will be competency based curriculum materials developed, field tested, and implemented in Illinois Agricultural Occupations programs.

PURPOSE OF THE PROJECT

The primary purpose of this project is to develop, adopt and implement competency based curriculum for Illinois Agricultural Occupations programs at the secondary level. It is also the purpose of this project to develop and report curriculum methodology which will be useful as other vocational programs implement competency based programs.

This project is segmented into three phases.

Phase I February 1, 1978 - June 30, 1978

The first phase introduced the project staff to current task analysis procedures of developing competency based vocational curriculum. Phase I developed a list of job titles for one of the USOE Agricultural Occupation program areas.

The area chosen was horticulture. One horticulture job title area was selected to test task analysis validation procedures (purposive study). The purposive study is the curriculum development step which validates a job title list (catalog) of tasks for a specific geographic area, in this case, the Retail Florist job title area was selected. Finally the validated list of tasks contained in the job title catalog was sequenced to form the basis for the development of curriculum which will take place in Phase II.

Measurable Outcomes from Phase I

Phase II will follow the purposive study of the Retail Florists job title area by developing competency based instructional materials for that job title area. The procedures which were used to develop the Phase I job title matrix for the horticulture program area will be used to develop a matrix for the other six areas of Agricultural Occupations. Upon completion of the job title matrix for Illinois Agricultural Occupations, a 5-year plan of the development of a competency based curriculum for selected job title areas will be completed. This plan will account for and use materials available from Vocational Education Service, University of Illinois; the priority curriculum needs of Illinois Agricultural Occupations programs; cooperative efforts with the Indiana State Board of Vocational Education; and use of existing curriculum materials sources.

Measurable Outcomes from Phase II

1. Instructional resources that will provide horticulture teachers the materials necessary to teach the job title area of Retail Florists, developed in Phase I (curriculum will be developed and field tested).
2. A 5-year plan for the development of competency based vocational education in one program area (Agricultural Occupations).

3. Documentation of the curriculum development procedures which produced the plan and the job title specific set of competency based materials.

Phase III - Implementing the 5-year Plan

Phase III will involve the development and field testing of competency based curricula for Agricultural Occupations programs.

The job title areas developed into curricula will be based on the needs of Illinois agribusiness and the availability of conventional teaching materials. Upon completion of the development and field testing, in-service workshops will be held to provide Agricultural Occupation teachers with the materials and suggestions for their effective use.

OBJECTIVES OF THE MATRIX DEVELOPMENT

An occupational matrix consists of a listing of job titles, business titles, and business area titles which comprise an industry. The occupational matrix objectives for this study are as follows.

1. List and unify the business areas with the Illinois Horticulture Industry.
2. List and verify the business titles which exist within each business area of the Illinois Horticulture Industry.
3. List and verify the job titles which exist in each business title and business area of the Illinois Horticulture Industry.
4. Document the procedures used to construct an occupational matrix.

OBJECTIVES OF THE PURPOSIVE STUDY

A purposive study is the process of validating a list of tasks for a specified geographic area. The purposive study objectives for this study are as follows.

1. Identify a task list for the business title retail florist.
2. Validate the task list with a representative sample of Illinois retail florists.
3. Summarize the task statements in preparation for developing competency based teaching materials.
4. Document the procedures used to perform the purposive study.

CHAPTER II

DEVELOPMENT OF AN OCCUPATIONAL MATRIX

INTRODUCTION

A review of past vocational education curriculum development projects indicated that an occupational matrix is a new technique. The purpose of this chapter is to develop a procedural model. It should be kept in mind that the specific results presented in this section are used to illustrate procedures used to develop an occupational matrix.

PLANNING USING A FUNCTIONAL SCHEMATIC AND PERT TECHNIQUE

A functional schematic was used to plot the necessary activities of the project. This technique was most helpful in anticipating project needs and in assigning individual responsibilities. The schematic used during the project is presented as Figure I.

The Program Evaluation and Review Technique (PERT)[1] was used to assign time deadlines to the specific activities of each of the two elements of the project. The PERT chart for the matrix is reported as Figure II.

MATRIX PROCESS

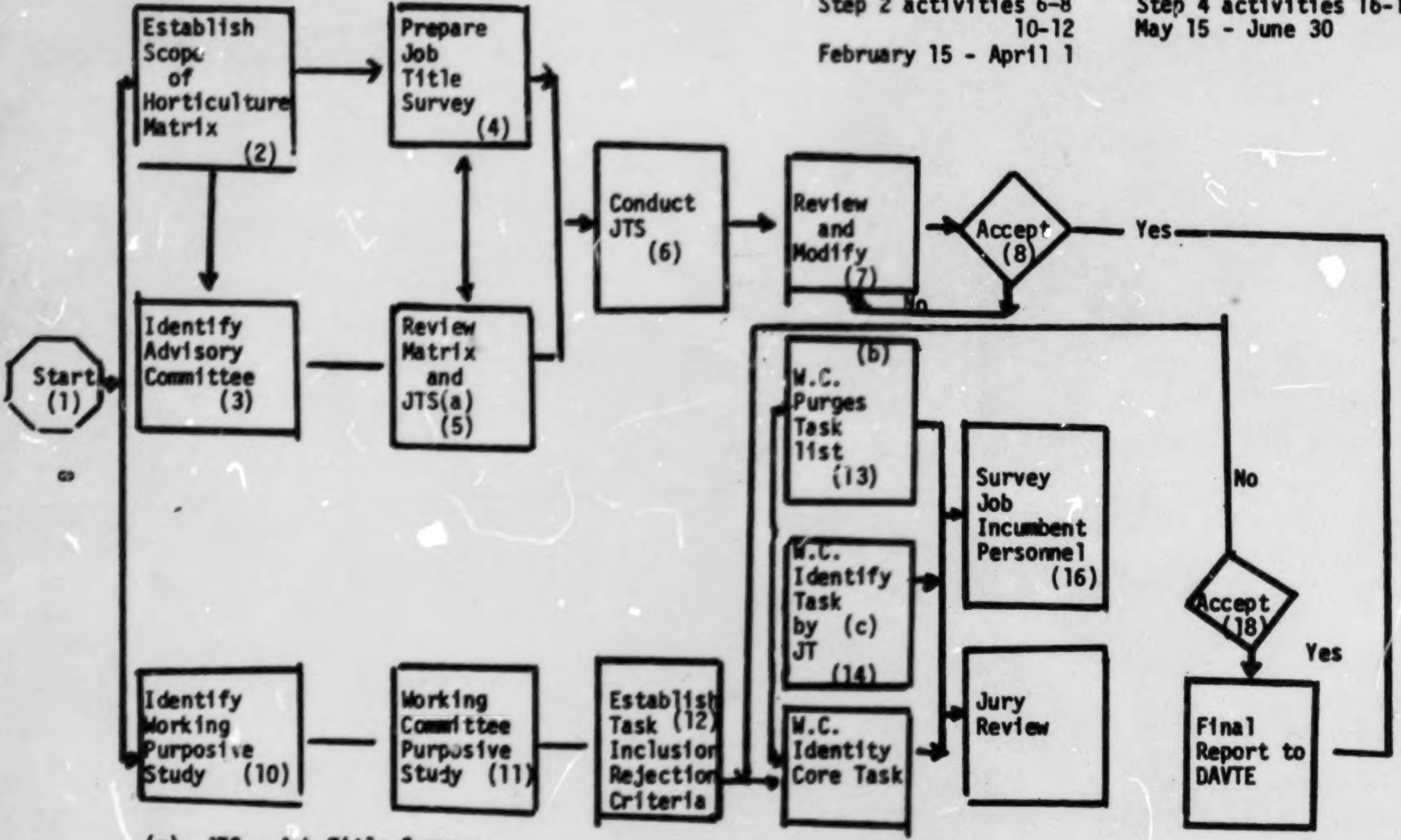
The first step was to establish the scope of the horticultural matrix. The project staff reviewed available studies. The Cornell ornamental horticulture study conducted by Dr. Legacy in 1972 identified business titled in

---

[1] Cook, Desmond L. Program Evaluation and Review Technique Applications in Education. USOE, Washington, D.C., 1966, 100 pages.

Time Schedule
Step 1 activities 1-5
January 1 - February 15
Step 2 activities 6-8
10-12
February 15 - April 1

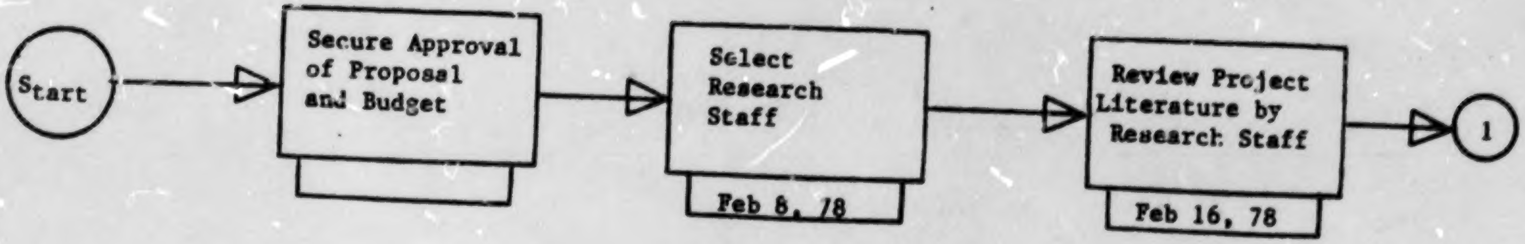
Step 3 activities 13-15
April 1 - May 15
Step 4 activities 16-19
May 15 - June 30

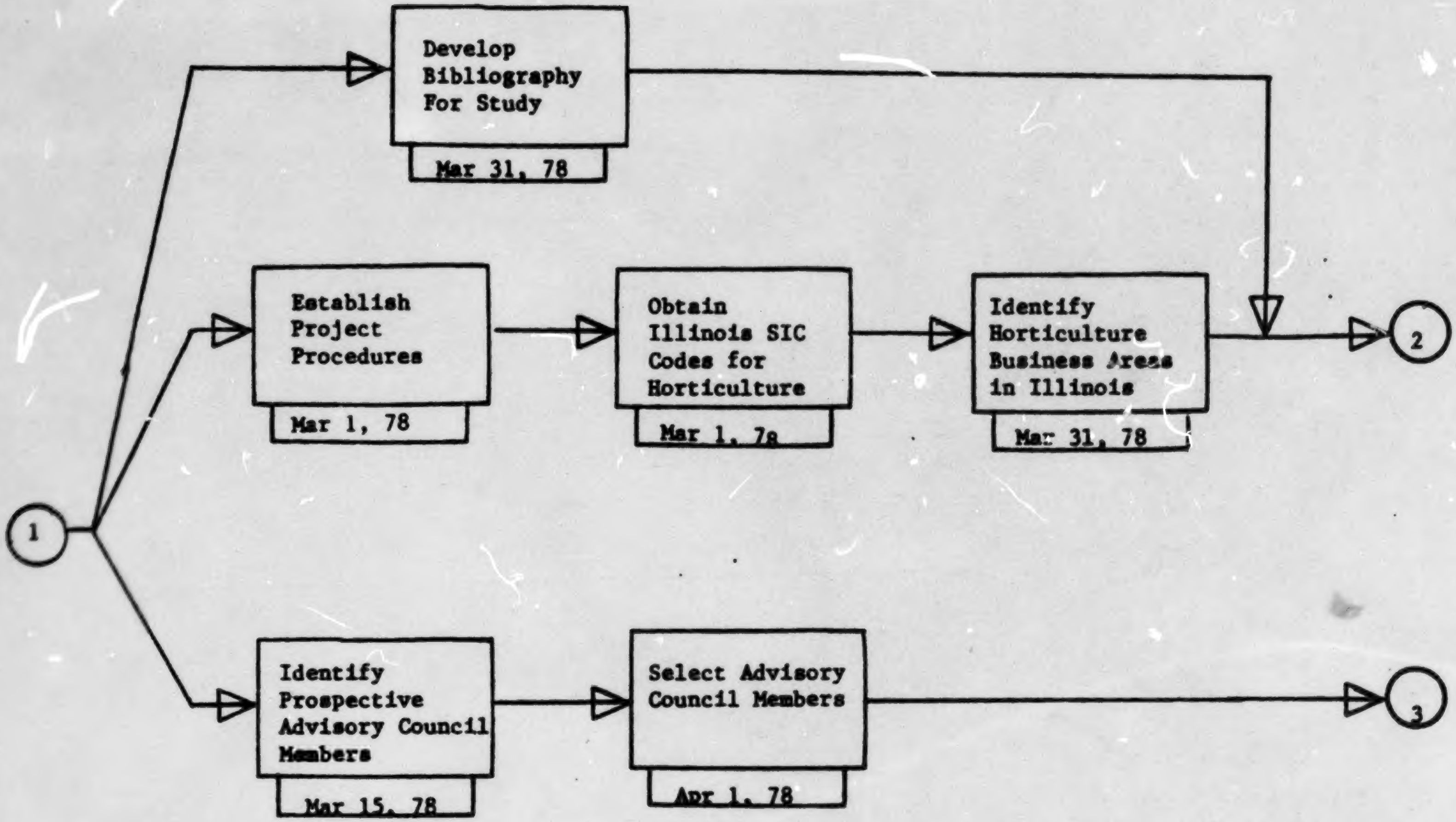

Start (1)
Establish Scope of Horticulture Matrix (2)
Prepare Job Title Survey (4)
Identify Advisory Committee (3)
Review Matrix and JTS(a) (5)
Conduct JTS (6)
Review and Modify (7)
Accept (8)
Yes
No
No
(b) W.C. Purges Task list (13)
W.C. Identify Task by (c) JT (14)
W.C. Identity Core Task
Survey Job Incumbent Personnel (16)
Jury Review
Accept (18)
Yes
Final Report to DAVTE
Identify Working Purposive Study (10)
Working Committee Purposive Study (11)
Establish Task (12) Inclusion Rejection Criteria

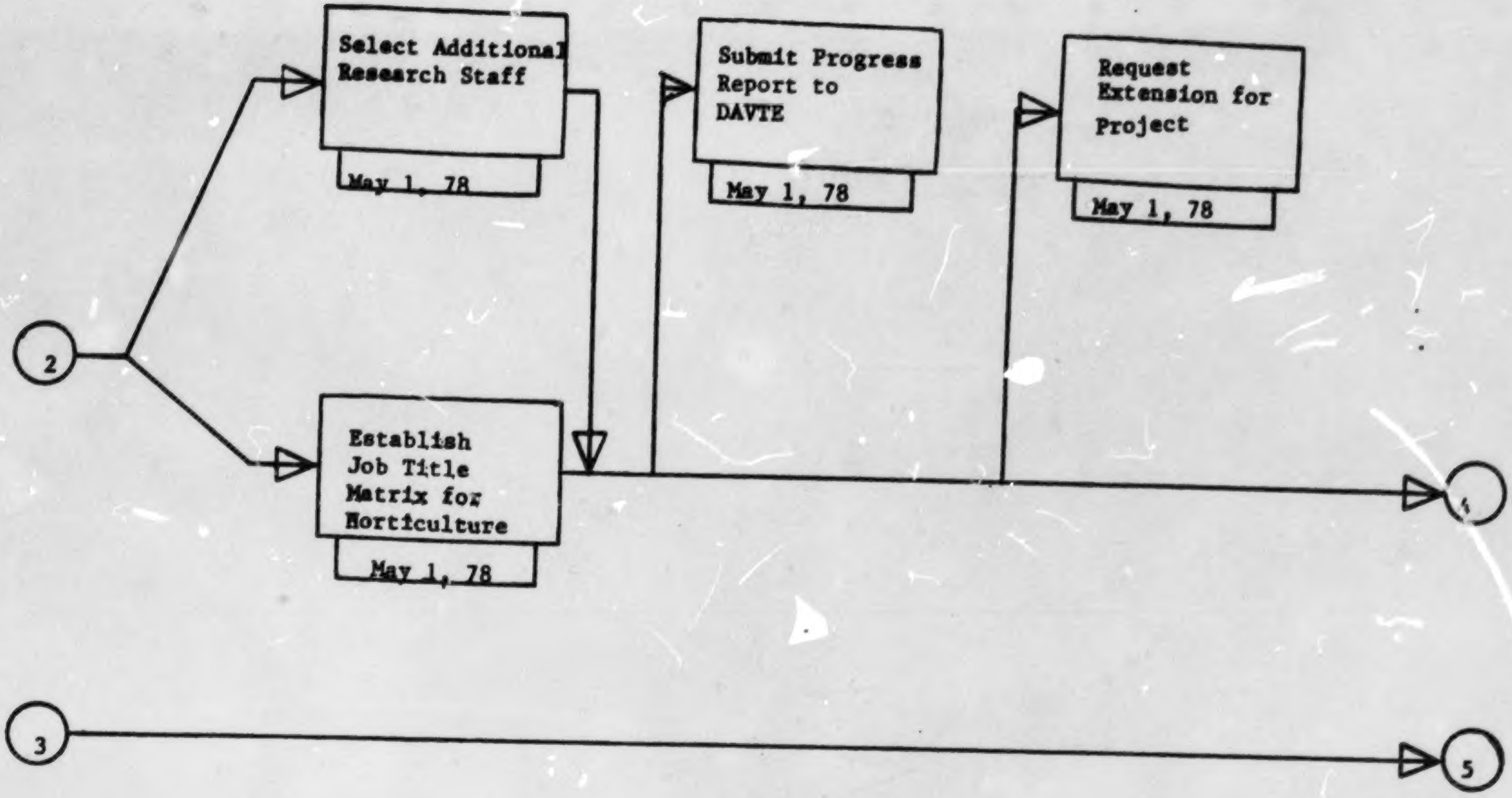
(a) JTS - Job Title Survey
(b) W.C. - Working Committee
(c) JT - Job Title

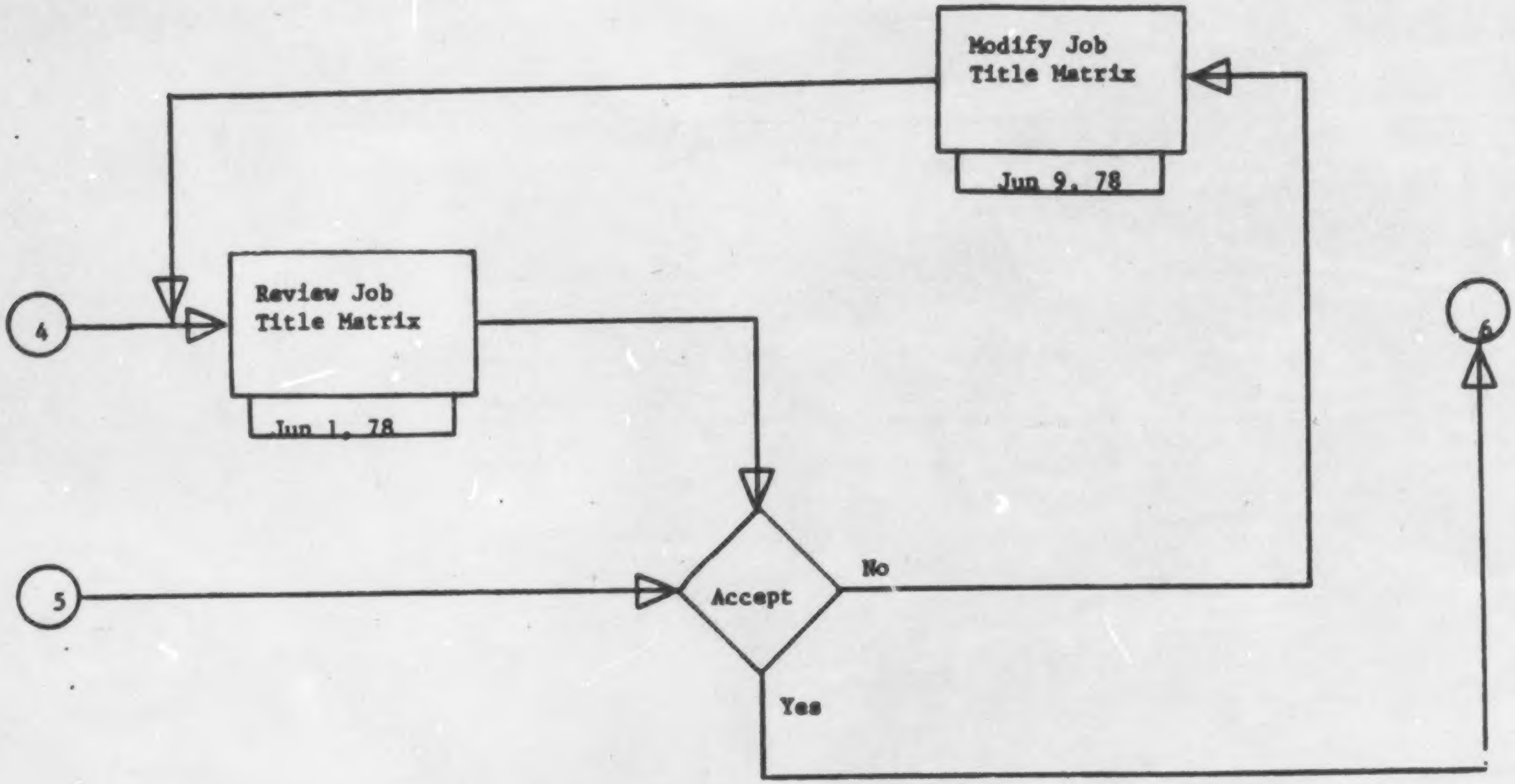
FIGURE I
FUNCTIONAL SCHEMATIC

FIGURE II
MATRIX PERT CHART


Start
Secure Approval of Proposal and Budget
Select Research Staff
Feb 8, 78
Review Project Literature by Research Staff
Feb 16, 78
1


Develop Bibliography For Study
Mar 31, 78
Establish Project Procedures
Mar 1, 78
Obtain Illinois SIC Codes for Horticulture
Mar 1, 78
Identify Horticulture Business Areas in Illinois
Mar 31, 78
1
2
Identify Prospective Advisory Council Members
Mar 15, 78
Select Advisory Council Members
Apr 1, 78
3


Select Additional Research Staff
May 1, 78
Submit Progress Report to DAVTE
May 1, 78
Request Extension for Project
May 1, 78
2
Establish Job Title Matrix for Horticulture
May 1, 78
4
3
5


Modify Job
Title Matrix
Jun 9, 78
4
Review Job
Title Matrix
Jun 1, 78
6
5
Accept
No
Yes

ornamental horticulture. A current Purdue University VTECS project made available a tentative occupational matrix. This matrix included vegetable, orchard and small fruit production. The Dictionary of Occupational Titles contributed several business titles including drug growers, landscape maintenance, seed grower and agricultural chemical supplier. The project staff identified and included landscape contractor, fruit and vegetable warehouses and wholesalers to provide the same linkage of grower/distributor/retailer which was built into the ornamental part of the horticulture matrix.

With this list completed, the project staff contacted the research office of the State Employment Service in Murphysboro, which provided the project with standard industrial classification (SIC) codes for the business titles listed. Mr. David Koch of the research office also suggested that the best way to determine numbers of businesses and employees by county for each code was to consult the Dun and Bradstreet credit reference computer printout at the Governor's Office of Manpower in Springfield. The detailed State Employment Service records of all businesses in Illinois were considered confidential and were not made available to the project.

The Governor's Office of Manpower records provided the project with total number of businesses and employees by county by SIC code. The Dun and Bradstreet credit reference file is a self-selected listing; upon request by a business, information about that business is recorded in the file. The project staff did cross-checking in areas where both the U.S. Agricultural Census and Dun and Bradstreet information were available. The result was confirmation that most businesses subscribed to the Dun and Bradstreet listing. The Chicago area was not included in the Springfield file. The U.S. census "County Business Patterns in Illinois in 1976" provided similar information for the six counties in the northeast corner of Illinois.

The next step was to plot the business information on a state map for each business title. See sample map Figure II. These maps are attached as Appendix B. In addition to the Dun and Bradstreet information, 1974 U.S. Agricultural Census information was available for growers of sod, seed, vegetables, orchards, berries, nursery plants, and flowers. Distribution maps were also made of each separate census area. Counties having 5% or more of the total businesses, employees, or growing area were marked as target areas for interview.

Several related business titles such as non-refrigerated and refrigerated warehouses were not included since less than 50% of their business was in the horticulture industry. A similar finding left agricultural chemicals for another industry matrix because while they are used in the horticultural industry, the quantities of chemicals used by grain farmers are much greater than their sales with horticulture producers.

An advisory committee of experts was selected for the project. This group included five faculty members of the SIU Plant and Soil Science Department, a field researcher from the U. of I., the three SIU Agricultural Industries faculty members who jointly submitted this proposal, four persons active in the horticulture industry, two of whom hold office in their state professional associations, a high school horticulture instructor and a representative from Springfield DAVTE. The four horticulture industry persons and the high school teacher also served on the project's steering committee. Upon completion of the distribution maps, these advisors were asked to help locate large and small businesses from our 5%-or-above interview target counties. The advisory council was most helpful in completing the interview list which included some very large horticulture businesses (World's Largest Sod Farm, U.S. largest wholesale florist). (See Steering Committee Materials, Appendix G).

The researchers in consultation with the committee grouped a listing of 23 Illinois horticulture business titles into business areas. The committee identified seven business areas, for example, Area I, Vegetable, Fruit and Flower Growers. Within each business area were several business types. Area I, for example, was composed of five business types which were field vegetable growers, berry growers, orchardists, greenhouse vegetable growers, and field and greenhouse floriculturists. The study committee had identified an interview list of three large and three small businesses from each of 23 business types. The telephone list included an additional small and large business for each business type. This would allow the calling researcher to replace a business which had closed or a business whose owner did not cooperate. Appendix B includes the committee's list of business areas and 23 business types. A review of the Dictionary of Occupational Titles provided a list of job titles for each business type. (Appendix C). This material and a survey interview form (Appendix D) was presented to the advisory committee before the job title survey was conducted.

The job title survey was conducted by three researchers. Managers of businesses were contacted by telephone and asked what job titles were used in that business and how many employees held each job title. If the business category was seasonal, the staff asked what the year-round and busy season employment totals were. The researchers asked which jobs required a high school graduate with no experience and which jobs a high school graduate with high school vocational specialization in horticulture would qualify for. The businesses were also asked to rank job titles as to entry-level, first advancement, skilled, and/or managerial titles. This information is summarized in the publication titled "Horticulture Education in Illinois".

The information from the job title survey was compiled on a master sheet. All the job titles were reviewed. Job titles with similar work descriptions were included as one job title, e.g. landscape foreman/supervisor. A summary produced the Occupational Matrix of Illinois Horticulture (Appendix E).

CHAPTER III

CONDUCTING A PURPOSIVE STUDY

INTRODUCTION

A review of past vocational education curriculum development projects indicated two basic methods of conducting a purposive study. Several studies have used mailed questions, while others employed researchers to conduct an indepth interview. This project obtained data from a series of 16 personal interviews to validate tasks performed by retail florists. As a sidelight to the study, a graduate student at SIU/C is conducting a similar survey by mailed questionaire. The results of this researcher's efforts should provide direction to future purposive studies.

PLANNING USING A FUNCTIONAL SCHEMATIC AND PERT CHART

Similar to the process used to develop the horticulture matrix, the researchers involved in the purposive study followed the study's functional schematic (see page 8) and a PERT chart (see Figure III). Once again, these planning tools were deemed very useful.

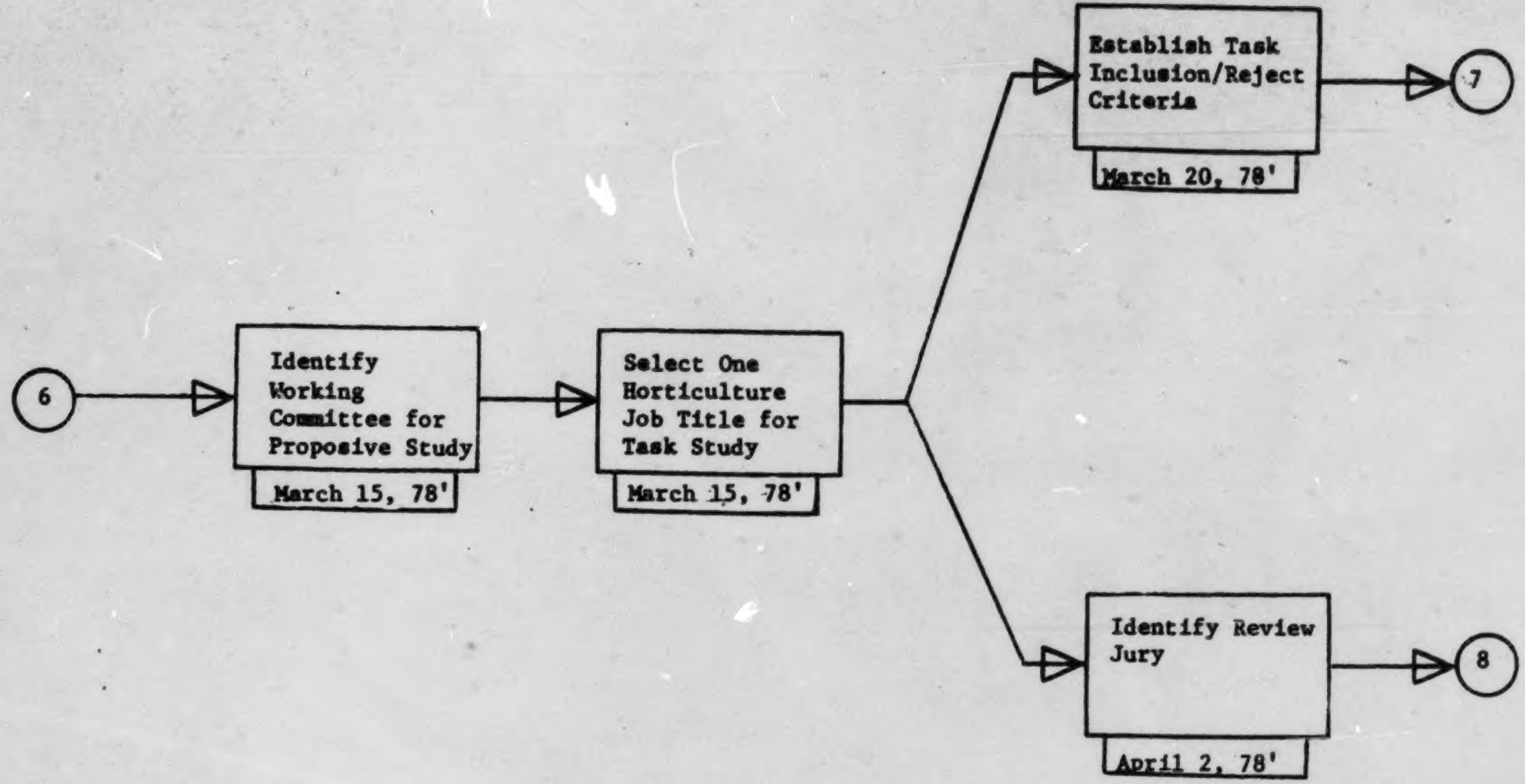
DEVELOPING THE TASK LIST AND INTERVIEW FORM

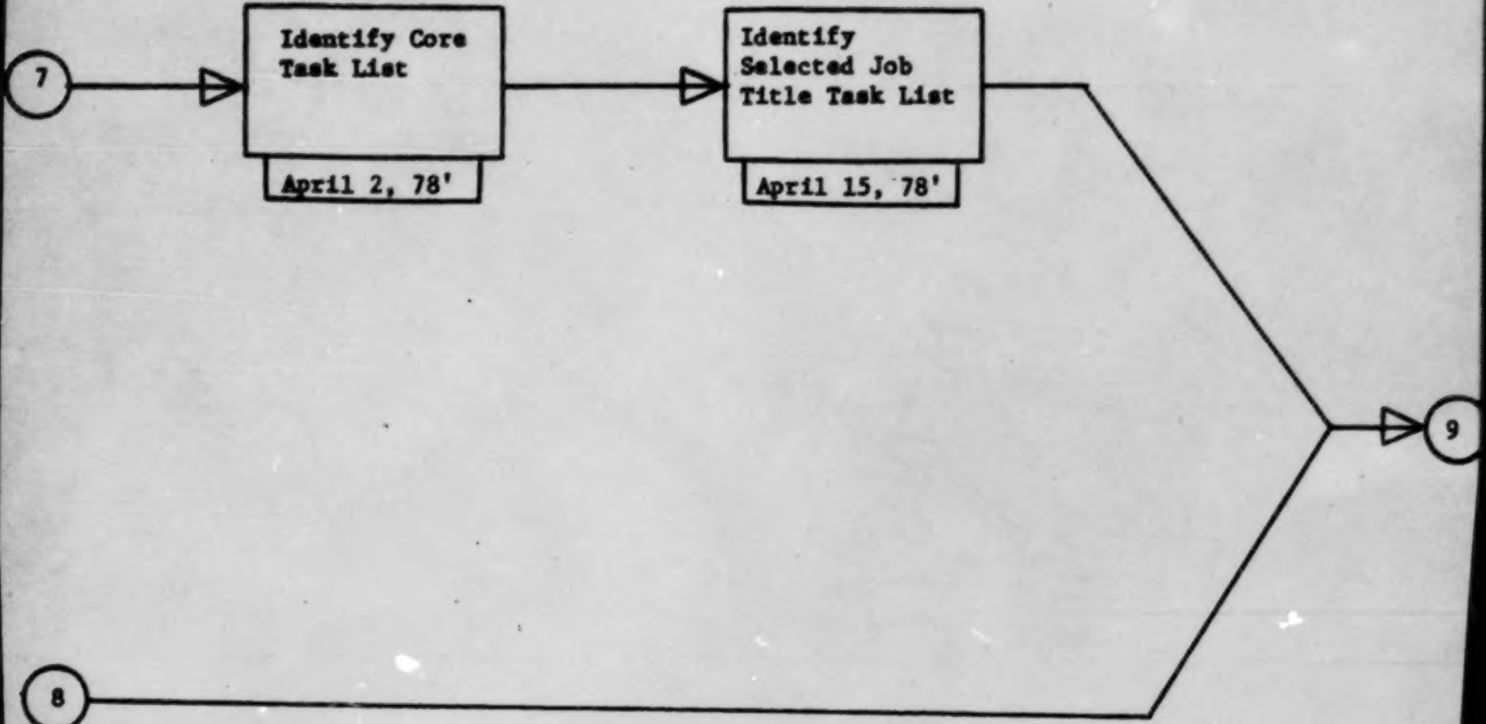
The task list was developed from a study made by Ohio State, a task model in Agribusiness at Cornell University, and by consulting the advisory committee.

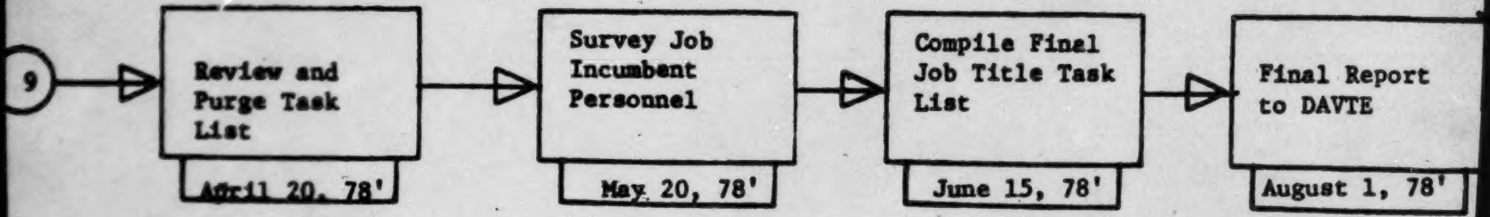
Approximately 100 tasks were divided into five major areas of the retail florist business: Design, Sales, Bookkeeping and Office, Delivery and

FIGURE III

PURPOSIVE STUDY PERT CHART


6
Identify Working Committee for Proposive Study
March 15, 78'
Select One Horticulture Job Title for Task Study
March 15, 78'
Establish Task Inclusion/Reject Criteria
March 20, 78'
7
Identify Review Jury
April 2, 78'
8


7
Identify Core Task List
April 2, 78'
Identify Selected Job Title Task List
April 15, 78'
8
9


9
Review and Purge Task List
April 20, 78'
Survey Job Incumbent Personnel
May 20, 78'
Compile Final Job Title Task List
June 15, 78'
Final Report to DAVTE
August 1, 78'

Maintenance, and Managerial tasks.

The first page of the questionaire included general information to be collected: name, address and phone number of the business, number of employees in each area, number of new employees in the past year in each area, and the range of salaries paid to employees in each area.

PRE-TESTING THE INTERVIEW FORM

The task analysis questionaire (Appendix F) was pre-tested with two personal interviews conducted by the two project interviewers. The pre-test was made to determine the length of time needed to complete the interviews, to uncover any problems in using the interview form, and to test the clarity and completeness of the task lists.

The task list was found to be complete. However, the task analysis questionaire was lengthy, so the questionaire form was modified to allow more task statements on each page.

The pre-test interview brought some potential problems of the interview form to the attention of the interviewers. It was decided that it wasn't feasible for florists to estimate the exact time spent performing each individual task. It had been hoped that the amount of time spent performing each task could be broken down into exact units of time, such as hours per day, but this proved to be impossible for the florists to estimate. Yet, an exact system which could easily be coded was needed. A system using broader classifications was used. Tasks were classified as 1) performed daily, 2) performed weekly, 3) performed monthly, or 4) performed yearly.

The classification of importance also had to be modified. Originally it had been hoped that the tasks could be classified as 1) essential for entry level jobs, 2) desirable for entry level jobs, 3) advanced jobs, or 4) managerial jobs. However, entry levels seemed to differ a great deal between florists. Florists seem to hire workers with varying entry level skills since some businesses desire more experienced workers than others. To alleviate this problem it was decided to classify the importance level as 1) performed by beginning employees, 2) performed by advanced employees, 3) performed by manager, 4) performed by owner, 5) performed by manager/owner. By using this classification the person who performs the task is identified.

It was also decided that a key explaining the classifications of time and importance was needed on each page of the form. This would help achieve uniformity between the two interviewers. The interviewers also decided that it was not necessary to check the tasks which were performed.

The tasks were also listed under the job title most likely to perform the skill, although space was left so other job titles could be written in.

IDENTIFYING THE GEOGRAPHIC AREA TO INTERVIEW

Using the Dun & Bradstreet file as a source, the number of florist firms and employees in each Illinois County was determined. (See Figure IV). It was determined that approximately one half of the firms and employees are located in the Chicago area, while the other half is located downstate. It was decided then that half of the interviews be conducted in the Chicago area and the other half of the interviews be conducted downstate. The four downstate counties that had the most employees in the florist business were selected. The counties included Winnebago, Peoria, Sangamon, and Madison. It was decided that two interviews be conducted in each county so task analysis information could include a small and a large shop.

The Chicago area contains five counties that have a similar number of employees. The counties include Lake, Cook, DuPage, Will, and Kane. It was decided that the eight interviews of florists (4 large shops and 4 small shops) be conducted in the area within the five counties. (See Table I).

SELECTION OF FLORIST TO BE INTERVIEWED

From each of the counties of concentration, two florists were selected. The researchers attempted to get as much variety as possible by selecting one large (10+ employees) and one small shop (-10 employees) from each county. Included were a hotel shop, a shopping center florist and the largest chain florist in Illinois.

The florists were selectively chosen from the Florist Transworld Delivery (FTD) membership list. Florists listed in this directory must meet high quality standards. This insured the selection of reputable business people.

The florists were further selected by personal contact through the Illinois Allied Florist Association trade meetings by the project interviewers.

After selecting the florists, phone calls were made to set up interview appointments.

TABLE I

COUNTIES WHERE INTERVIEWS WERE CONDUCTED

Chicago Area	Total Firms	Total Employees
Lake	26	157
Cook	353	2173
DuPage	45	330
Will	23	102
Kane	26	197

Downstate	Total Firms	Total Employees
Winnebago	23	132
Peoria	27	149
Sangamon	16	110
Madison	26	107

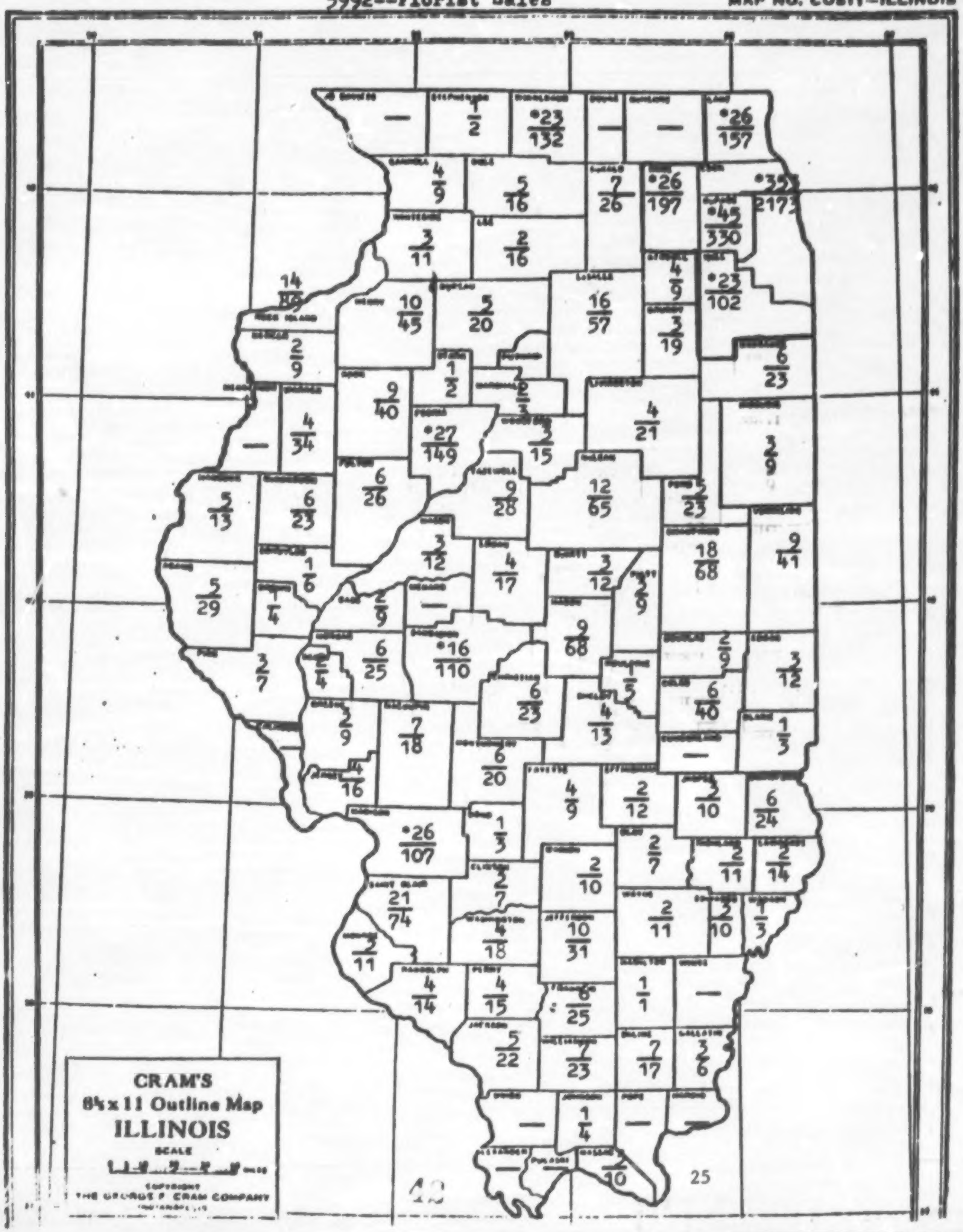
FIGURE IV
PURPOSIVE STUDY INTERVIEW MAP

(Source: Dun & Bradstreet File)

Downstate
Total firms 476
Total employees 2086

Chicago area
Total firms 473
Total employees 2959

5992--Florist Sales


MAP NO. C0511-ILLINOIS
—
1/2
•23/132
—
—
•26/157
4/9
5/16
7/26
•26/197
•353/2173
•45/330
3/11
2/16
4/9
•23/102
14/89
10/45
5/20
16/57
3/19
2/9
6/23
1/2
2/3
9/40
4/34
—
•27/149
3/15
4/21
3/9
6/26
5/13
6/23
9/28
12/65
5/23
3/12
4/17
3/12
3/9
18/68
9/41
1/6
5/29
1/4
2/9
—
9/68
3/7
2/4
6/25
•16/110
2/9
3/12
1/5
6/40
6/23
4/13
2/9
7/18
6/20
1/3
—
4/16
4/9
2/12
3/10
6/24
•26/107
1/3
2/7
2/10
2/11
2/14
2/7
21/74
2/11
2/10
1/3
4/18
10/31
2/11
4/14
4/15
6/25
1/1
—
5/22
7/23
7/17
3/6
—
1/4
—
—
10
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

CONDUCTING THE INTERVIEWS

The interviews were made in approximately one week by two project interviewers. Each interview took from 45 minutes to two hours depending on the responsiveness of the florist. Some preferred to fill out the interview form themselves, some preferred to read to the interviewer while the interviewer recorded their answers and some read along with the interviewer just giving answers. The last method seemed to be the most efficient.

CHAPTER IV

RESULTS

INTRODUCTION

This chapter is divided into two parts. Part I reports the data produced from the telephone interviews conducted to construct an Occupational Matrix. Part II summarizes the results of the interviews conducted to complete the Purposive Study of the Retail Florists business in Illinois.

PART I MATRIX DATA

The results or data of 133 telephone interviews provided information which corrected the preliminary listing of Illinois Horticulture Industry job titles. The preliminary listing (see Appendix C) identified 180 different job titles among the 23 business titles which comprise the Illinois Horticulture industry. The telephone interviews identified 262 existing job titles. However, most of the 262 identified by the interviews were different titles than those assembled by the literature search and by the advice of the committee of experts. As shown on Table IV only 67 of the 180 preliminary job titles were found to exist. One hundred ninety five job titles were identified which were not found during the search of existing literature.

In addition to discovery of job titles, the survey provided evidence for reporting six new business types. They were added to the 17 business titles identified by the literature and experts to produce the 23 business types listed at the bottom of Table IV. The criteria used to name a new business type was did the business perform 50% or more of its activities in the

TABLE IV

SUMMARY OF ILLINOIS HORTICULTURE JOB TITLES

Business Area	I	II	III	IV	V	VI	VII	TOTALS 7
Business Types	1-2 & 3-4-5	6-7-8	9-10-11-12-13-14	15-16	17-18	19-20	21-22-23	
# of Prelim. Job Titles	17-17-13-0	4-3-0	21-8-0-11-13-0	16-0	7-5	6-10	6-9-0	23
# of Job Titles Valid'd	2-7-9-0	3-2-0	5-3-0-6-6-0	4-0	2-1	4-4	4-5-0	67
# of New Job Titles Ident'd	6-7-7-21	12-14-7	4-6-8-1-5-16	8-2	20-7	11-13	1-6-14	195
# of Total Final Matrix Job Titles	8-14-16-21	12-15-7	9-9-8-7-11-16	12-2	22-8	15-17	5-11-14	262

*Indicates the business types which were identified by the interviews.

KEY TO BUSINESS TYPE:
1. Field Grown Vegetables
2. Berry Growers
3. Orchards
4. Flower Growers
*5. Greenhouse Vegetables
6. Landscape Architect
7. Landscape Contractor
*8. Plant Rental Service
9. Wholesale Nurseries
10. Wholesale Greenhouses
*11. Tree Seed Services
12. Tree Services
13. Sod Farms
*14. Vegetable Seeds
15. Retail Nurseries
*16. Chain Nurseries
17. Wholesale Fruit
18. Fruit Stands
19. Wholesale Florists
20. Retail Florists
21. Golf Maintenance
22. Lawn & Garden Service
*23. Public Gardens

enterprise named area. For example, a newly emerging business type "Plant Rental Services" was identified. These businesses specialized only in the rental and care of rental plants.

The data gathered about entry jobs which were open to high school vocationally prepared and non-vocationally prepared is summarized in the publication "Horticulture Education in Illinois". In each business area, job titles and advanced entry jobs were available to vocationally prepared applicants.

PART II

PURPOSIVE STUDY DATA

The task analysis of a floral shop provided information on the amount of time that is spent doing each task, the importance of a task, and who performs each task. The following two tables provide the composite percentages of this information. Bookkeeping and managerial tasks were not included in the tables, since it was found that beginning and advanced employees did not perform these tasks.

TABLE II

Data From Task Analysis of Floral Shop

Key of Importance

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Performed by manager-owner
All-Performed by all employees
N/R-No response

		Per cent						
	Task Statements	B	A	M	O	M/O	All	N/R
1001	Idenfity common flowers and foliage	60	33.3				6.7	
1002	Follow safety precautions	86.7	6.7				6.7	
1003	Design bud vase	93.3	6.7					
1004	Design hospital vase	20	80					
1005	Design simple corsage	66.7	33.3					
1006	Dress potted plants	86.7	6.7					6.7
1007	Construct planters and terrariums	26.7	73.3					
1008	Write cards and lettering	86.7	13.3					
1009	Make bows	73.3	26.7					
1010	Give advice on care of cut flowers and foliage	20	66.7	13.3				
1011	Select proper design for occasion		86.7	13.3				
1012	Select proper vase for design	13.3	86.7					
1013	Select proper flowers for vase, design and occasion	6.7	93.3					
1014	Design advance style arrangements such as hospital and grandopening		100					
1015	Design advance corsage		100					
1016	Design centerpiece	20	80					
1017	Design funeral basket	20	80					
1018	Design dried, silk, and other permanent flower arrangements		100					
1019	Identify dried materials	13.3	80		6.7			
1020	Design fruit basket arrangement	6.7	60	6.7	6.7			20
1021	Design casket spray	13.3	40	13.3				33.3
1022	Design wedding bouquet	6.7	86.7	6.7				
1023	Set up weddings	6.7	66.7	13.3	6.7	6.7		
1024	Plan and organize work activities		33.3	53.3	13.3			
1025	Identify flowers and foliage	80	20					

1026	Identify foliage plants	73.3	26.7				
1027	Operate cash register	80	13.3				6.7
1028	Sell floral product	80	13.3				6.7
1029	Use telephone to accept and send customers' orders	46.7	40			6.7	6.7
1030	Give information	46.7	46.7				6.7
1031	Give cost estimates of flowers and plants	6.7	66.7	6.7		6.7	13.3
1032	Wrap products sold	93.3					6.7
1033	Stock shelves	80	13.3				6.7
1034	Identify customers' needs and wants	26.7	66.7			6.7	
1035	Give information on care of plants and cut flowers	13.3	80	6.7			
1036	Establish and maintain display areas	33.3	40	13.3		6.7	6.7
1037	Set up display window	20	53.3	6.7		6.7	13.3
1038	Ship and deliver merchandise	40	40				20
1039	Idenfity plant insect and disease infestations		66.7	13.3	13.3		6.7

	Task Statements	B	A	M	O	M/O	All	N/R
1040	Price merchandise	13.3	33.3	20	20	6.7		6.7
1041	Use credit systems of payment	53.3	33.3	6.7				6.7
1042	Give estimates on funerals and weddings		80	6.7		6.7		6.7
1043	Explain and demonstrate accessory items	40	40	6.7	6.7			6.7
1044	Order merchandise		20	53.3	6.7	13.3		6.7
1045	Prepare advertising material		6.7	40	33.3			20
1046	Keep current inventory		26.7	33.3	20	6.7		13.3
1047	Check invoices of received merchandise		60	26.7	6.7			6.7
1048	Take annual inventory for sales	13.3	6.7	40	20	6.7		13.3
1049	Keep price lists and catalogs current	6.7	13.3	53.3	20			6.7
1050	Deliver orders	73.3	26.7					
1051	Keep work amd delivery area neat and clean	93.3	6.7					
1052	Light maintenance of delivery vehicle and building	66.7	13.3			13.3		6.7
1053	Receive, handle, and care for cut flowers received from the wholesaler	53.3	33.3					13.3
1054	Maintain tools and equipment	66.7	6.7		20			6.7
1055	Clean cooler	73.3	13.3					13.3

Data From Task Analysis of Floral Shop

Key

D-Task performed daily
W-Task performed weekly
M-Task performed monthly
Y-Task performed yearly
A/N-Task performed as needed
N/R-No response

	Task Statements			Per cent			
		D	W	M	Y	A/N	N/R
1001	Identify common flowers and foliage	100					
1002	Follow safety precautions	100					
1003	Design bud vase	100					
1004	Design hospital vase	100					
1005	Design simple corsage	73.3	26.7				
1006	Dress potted plants	93.3	6.7				
1007	Construct planters and terrariums	93.3	6.7				
1008	Write cards and lettering	93.3	6.7				
1009	Make bows	93.3				6.7	
1010	Give advice on care of cut flowers and foliage	100					
1011	Select proper design for occasion	93.3				6.7	
1012	Select proper vase for design	100					
1013	Select proper flowers for vase, design, and occasion	100					
1014	Design advance style arrangements such as hospital and grandopening	100					
1015	Design advance corsage	80	20				
1016	Design centerpiece	100					
1017	Design funeral basket	100					
1018	Design dried, silk and other permanent flower arrangements	80	20				
1019	Identify dried materials	86.7	6.7	6.7			
1020	Design fruit basket arrangement	33.3	26.7	20			20
1021	Design casket spray	13.3	26.7	20			40
1022	Design wedding bouquet	26.7	53.3	20			
1023	Set up weddings	20	60	20			

1024	Plan and organize work activities	86.7	6.7			6.7	
1025	Identify flowers and floiage	100					
1026	Identify foliage plants	100					
1027	Operate cash register	93.3					6.7
1028	Sell floral product	93.3					6.7
1029	Use telephone to accept and send customers' orders	93.3					
1030	Give information	46.7	46.7				6.7
1031	Give cost estimates of flowers and plants	93.3					6.7
1032	Wrap products sold	93.3					6.7
1033	Stock shelves	80	13.3				6.7
1034	Identify customers' needs and wants	93.3					6.7
1035	Give information on care of plants and cut flowers	100					
1036	Establish and maintain display areas	73.3	20	6.7			
1037	Set up display window	13.3	46.7	40			
1038	Ship and deliver merchandise	86.7	6.7				6.7
1039	Identify plant insect and disease infestations	80	13.3				6.7
1040	Price merchandise	80				20	
1041	Use credit systems of payment	100					
1042	Give estimates on funerals and weddings	86.7	6.7	6.7			
1043	Explain and demonstrate accessory items	80	13.3				6.7
1044	Order merchandise	80	13.3			6.7	
1045	Prepare advertising material	13.3	33.3	33.3	6.7	6.7	6.7
1046	Keep current inventory	46.7	6.7	20	13.3	6.7	6.7
1047	Check invoices of received merchandise	80	13.3	6.7			
1048	Take annual inventory for sales			26.7	66.7	6.7	
1049	Keep price lists and catalogs current	33.3	13.3	20	20	13.3	
1050	Deliver orders	100					
1051	Keep work and delivery area neat and clean	100					
1052	Light maintenance of delivery vehicle and building	86.7		6.7			6.7
1053	Receive, handle, and care for cut flowers received from the wholesaler	93.3				6.7	
1054	Maintain tools and equipment	80	6.7			6.7	
1055	Clean cooler	66.7	26.7				6.7

ORGANIZING TASK DATA FOR CURRICULUM DEVELOPMENT

In order to develop a curriculum which would be based on tasks that are most frequently done by entry-level employees, the task statements had to be ranked by importance. The task statements for designer, sales, and delivery and maintenance, were ranked as 1.) essential tasks; 2.) important tasks; 3.) useful tasks; and 4.) tasks which a beginner doesn't need to know.

Tasks were classified as essential if over 50% of the florists interviewed classified the task as a beginning task.

A task had to be performed by a beginning, advanced, or combination of these, by 50% of the floral shops interviewed in order to be classified as important. A task also had to be performed daily by 50% of the floral shops interviewed to be classified as important.

Tasks were classified as useful if they were performed by beginning, advanced, or combination of these, by 50% of the floral shops interviewed. The tasks also had to be performed at least weekly in 50% of the floral shops in order to be classified as useful.

Tasks which were performed less often that this or by more advanced employees were classified as tasks which a beginner doesn't need to know.

TABLE III

RANK OF TASK IMPORTANCE

DESIGNER TASKS

Essential Tasks

1001	Identify common flowers and foliage
1002	Follow safety precautions
1003	Design bud vase
1005	Design simple corsage
1006	Dress potted plants
1008	Write cards and lettering
1009	Make bows

Important Tasks

1004	Design hospital vase
1007	Construct planters and terrariums
1010	Give advice on care of cut flowers and foliage
1011	Select proper design for occasion
1012	Select proper vase for design
1013	Select proper flowers for vase, design and occasion
1014	Design advance style arrangements such as hospital and grandopening
1015	Design advance corsage
1016	Design centerpiece
1017	Design funeral basket
1018	Design dried, silk and other permanent flower arrangements
1019	Identify dried materials

Useful Tasks

1020 Design fruit basket arrangement

1022 Design wedding boquet

1023 Set up weddings

Tasks which a beginner doesn't need to know

1021 Design casket spray

1024 Plan and organize work activities

SALES TASKS

Essential Tasks

1025 Identify flowers and foliage

1026 Identify foliage plants

1027 Operate cash register

1028 Sell floral product

1032 Wrap products sold

1033 Stock shelves

Important Tasks

1029 Use telephone to accept and send customers' orders

1030 Give information

1031 Give cost estimates of flowers and plants

1034 Identify customers' needs and wants

1035 Give information on care of plants and cut flowers

1036 Establish and maintain display areas

1037 Set up display areas

1038 Ship and deliver merchandise

1039 Identify plant insect and disease infestations

1041 Use credit systems of payment

1042 Give estimates on funerals and weddings

1043 Explain and demonstrate accessory items

1047 Check invoices of received merchandise

Tasks which beginner doesn't need to know

1040 Price merchandise

1044 Order merchandise

1045 Prepare advertising material

1046 Keep current inventory

1048 Take annual inventory of sales

1049 Keep price lists and catalogs current

DELIVERY AND MAINTENANCE

Essential Tasks

1050 Deliver orders

1051 Keep work and delivery area neat and clean

1052 Light maintenance of delivery vehicle and building

1053 Receive, handle, and care for cut flowers received from the wholesaler

1054 Maintain tools and equipment

1055 Clean cooler

The essential and important tasks will serve as a basis for required learning activities of a Competency Based Curriculum. Useful tasks will be included as optional learning activities for beginning employment in retail florists businesses.

CHAPTER V

FINDINGS AND RECOMMENDATIONS

FINDINGS

The findings of the matrix and the purposive study suggest that each step resulted in a more clear understanding of the industry under investigation. The data from the occupational matrix pre-interview is significantly different than the data which resulted from the telephone interviews. The results of the retail florist purposive study suggest that beginning employees require training in three areas of business operation: sales, delivery, and design. Today vocational curriculum is retail florist preparation emphasizes only the design element for beginning employment.

RECOMMENDATIONS

Based on the results of this field test of two potential procedures of Competency Based Vocational Education Development, the following recommendations are made:

1. Construction of an occupational matrix should be verified by field contact. A significantly different list of job titles was found to exist in today's horticulture industry as compared to the results of an extensive review of literature and advisory committee work.
2. Competency Based Vocational Education Curriculum Development should include a purposive study phase. The results of the field interviews with a variety of floral businesses reported that current beginning employment training does not reflect the beginning training needs of the industry.

3. Further tests and comparisons of this kind need to be conducted to confirm the above recommendations. It should be recognized that the recommendations of this project as based on the results of one test situation. The procedures should be repeated in other disciplines to measure reliability before being broadly used in vocational education.

APPENDIX A

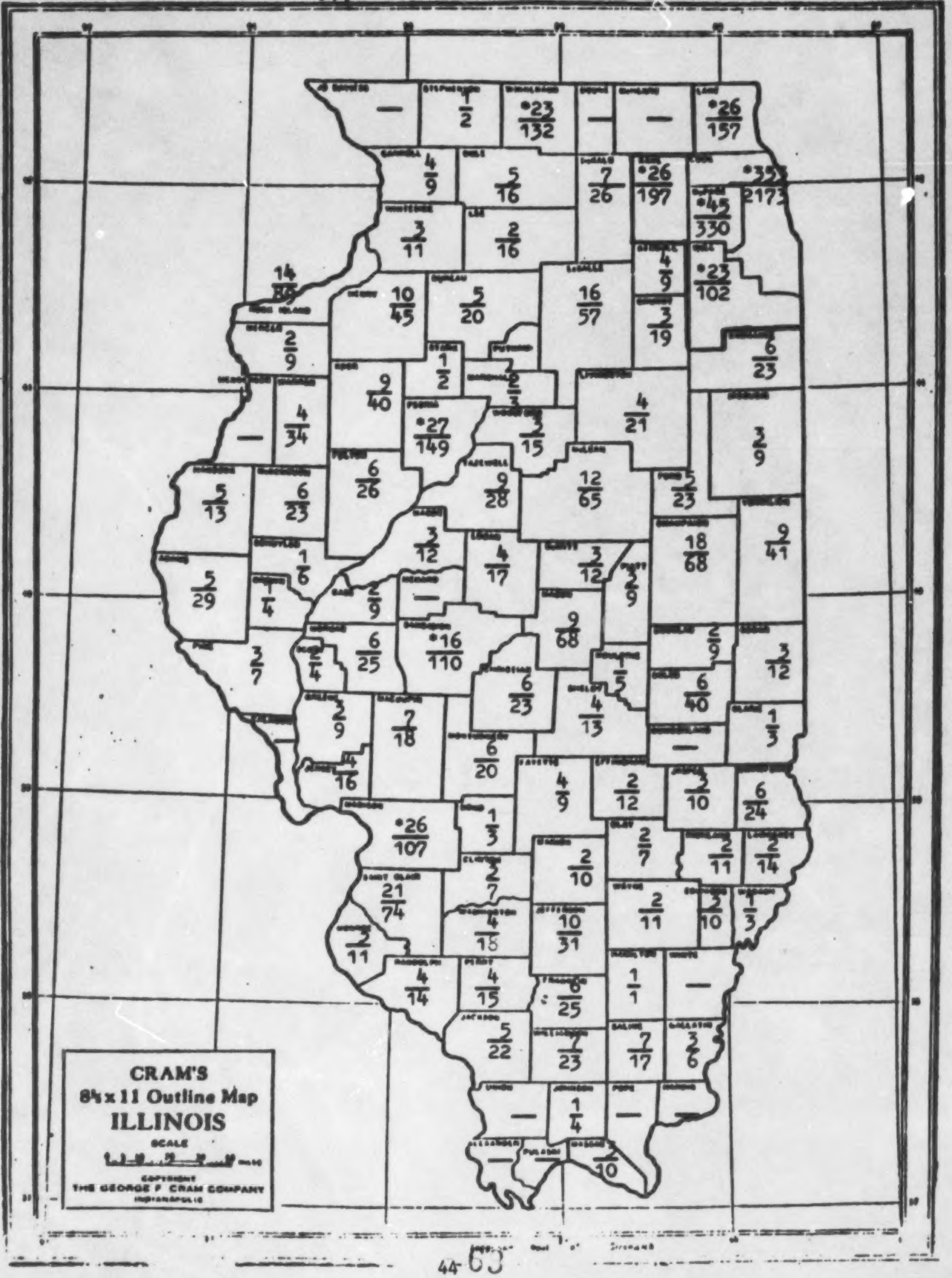
BUSINESS TITLE DISTRIBUTION MAPS

Downstate (Source: Dun & Bradstreet File) **Chicago area**

Total firms	476	Total firms	473
Total employees	2086	Total employees	2959

5992--Florist Sales

MAP NO. C0511—ILLINOIS

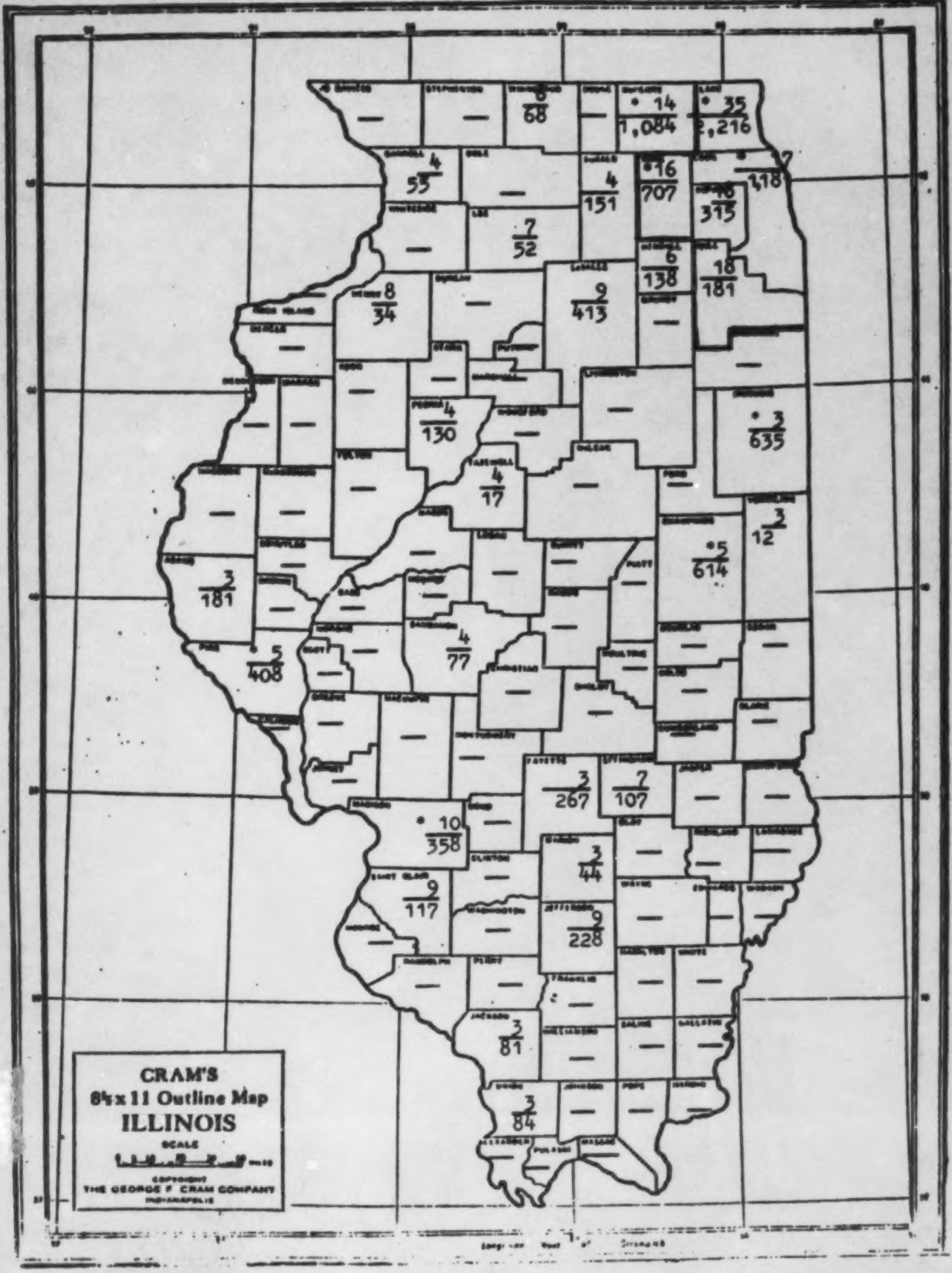

—
1/2
*23/132
—
—
*26/157
4/9
5/16
7/26
*26/197
*353/2173
3/11
2/16
*45/330
14/85
10/45
5/20
16/57
4/9
*23/102
2/9
3/19
6/23
1/2
2/3
9/40
4/21
—
4/34
*27/149
3/15
3/9
5/13
6/23
6/26
9/28
12/65
5/23
3/12
18/68
9/41
5/29
1/6
1/4
2/9
—
4/17
3/12
2/9
3/7
2/4
6/25
*16/110
9/68
2/9
3/12
1/5
6/23
6/40
2/9
7/18
4/13
4/16
—
1/3
6/20
4/9
2/12
2/10
6/24
*26/107
1/3
2/7
2/10
2/11
2/14
21/74
2/7
10/31
4/18
2/11
2/10
1/3
2/11
4/14
4/15
6/25
1/1
—
5/22
7/23
7/17
3/6
—
1/4
—
—
—
2/10
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

Downstate
Total firms 179
Total acres 5,433

(Agric. census)

Nursery & greenhouse products

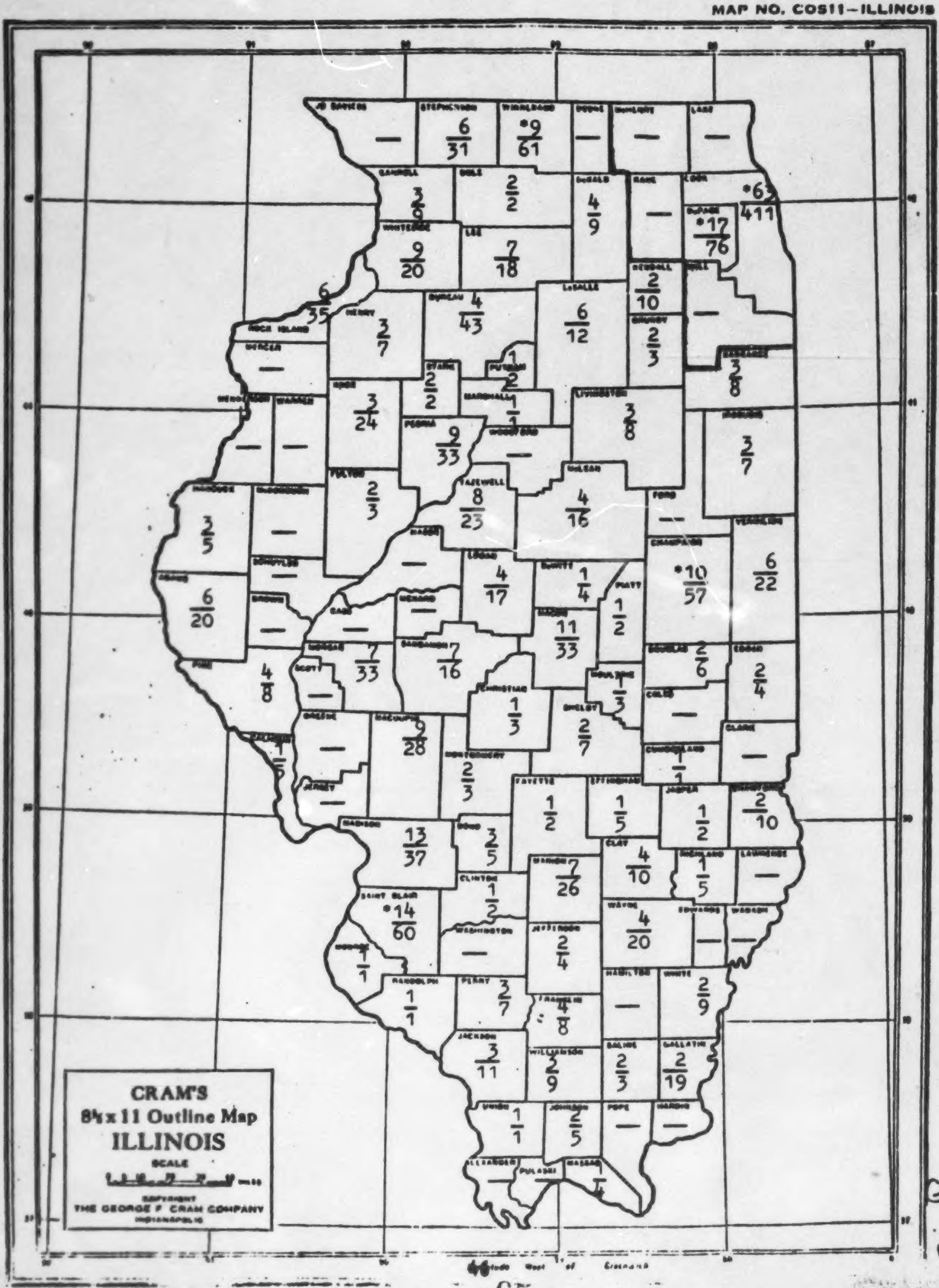
Chicago area
Total firms 118
Total acres 5,684
MAP NO. CO511—ILLINOIS


8
68
• 14
1,084
• 35
2,216
4
55
4
151
•16
707
7
118
16
315
7
52
6
138
18
181
8
34
9
413
ROCK ISLAND
MERCER
PEORIA
4
130
• 3
635
TAZEWELL
4
17
3
12
•5
614
3
181
5
408
4
77
3
267
7
107
MADISON
• 10
358
CLINTON
3
44
ST. CLAIR
9
117
WASHINGTON
JEFFERSON
9
228
JACKSON
3
81
UNION
3
84
ALEXANDER
PULASKI
CRAM'S
8½x11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS
Longitude West of Greenwich

Downstate		(Source: Dun & Bradstreet file)	**Chicago area**	
Total firms	264		Total firms	80
Total employees	936		Total employees	487

5261--Retail Nurseries, Lawn & Garden Sales

SIU


MAP NO. CO511-ILLINOIS
JO DAVIESS —
STEPHENSON 6/31
WINNEBAGO *9/61
BOONE —
MCHENRY —
LAKE —
CARROLL 3/9
OGLE 2/2
DEKALB 4/9
KANE —
COOK *63/411
DUPAGE *17/76
WHITESIDE 9/20
LEE 7/18
ROCK ISLAND 6/35
MERCER —
HENRY 3/7
BUREAU 4/43
LASALLE 6/12
KENDALL 2/10
GRUNDY 2/3
WILL —
KANKAKEE 3/8
STARK 2/2
PUTNAM 1/2
MARSHALL 1/1
KNOX 3/24
HENDERSON —
WARREN —
PEORIA 9/33
WOODFORD —
LIVINGSTON 3/8
IROQUOIS 3/7
FULTON 2/3
TAZEWELL 8/23
MCLEAN 4/16
FORD —
HANCOCK 3/5
MCDONOUGH —
MASON —
LOGAN 4/17
DEWITT 1/4
PIATT 1/2
CHAMPAIGN *10/57
VERMILION 6/22
ADAMS 6/20
SCHUYLER —
BROWN —
CASS —
MENARD —
MACON 11/33
PIKE 4/8
SCOTT —
MORGAN 7/33
SANGAMON 7/16
DOUGLAS 2/6
EDGAR 2/4
MOULTRIE 1/3
CHRISTIAN 1/3
SHELBY 2/7
COLES —
GREENE —
MACOUPIN 9/28
CALHOUN 1/5
JERSEY —
MONTGOMERY 2/3
CUMBERLAND 1/1
CLARK —
FAYETTE 1/2
EFFINGHAM 1/5
JASPER 1/2
CRAWFORD 2/10
MADISON 13/37
BOND 3/5
CLAY 4/10
MARION 7/26
RICHLAND 1/5
LAWRENCE —
CLINTON 1/2
SAINT CLAIR *14/60
WASHINGTON —
JEFFERSON 2/4
WAYNE 4/20
EDWARDS —
WABASH —
MONROE 1/1
RANDOLPH 1/1
PERRY 3/7
FRANKLIN 4/8
HAMILTON —
WHITE 2/9
JACKSON 3/11
WILLIAMSON 2/9
SALINE 2/3
GALLATIN 2/19
UNION 1/1
JOHNSON 2/5
POPE —
HARDIN —
ALEXANDER —
PULASKI —
MASSAC 1/4
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS
Longitude West of Greenwich

G41
.A1
196
C1

Downstate
Firms 72
Employees 218

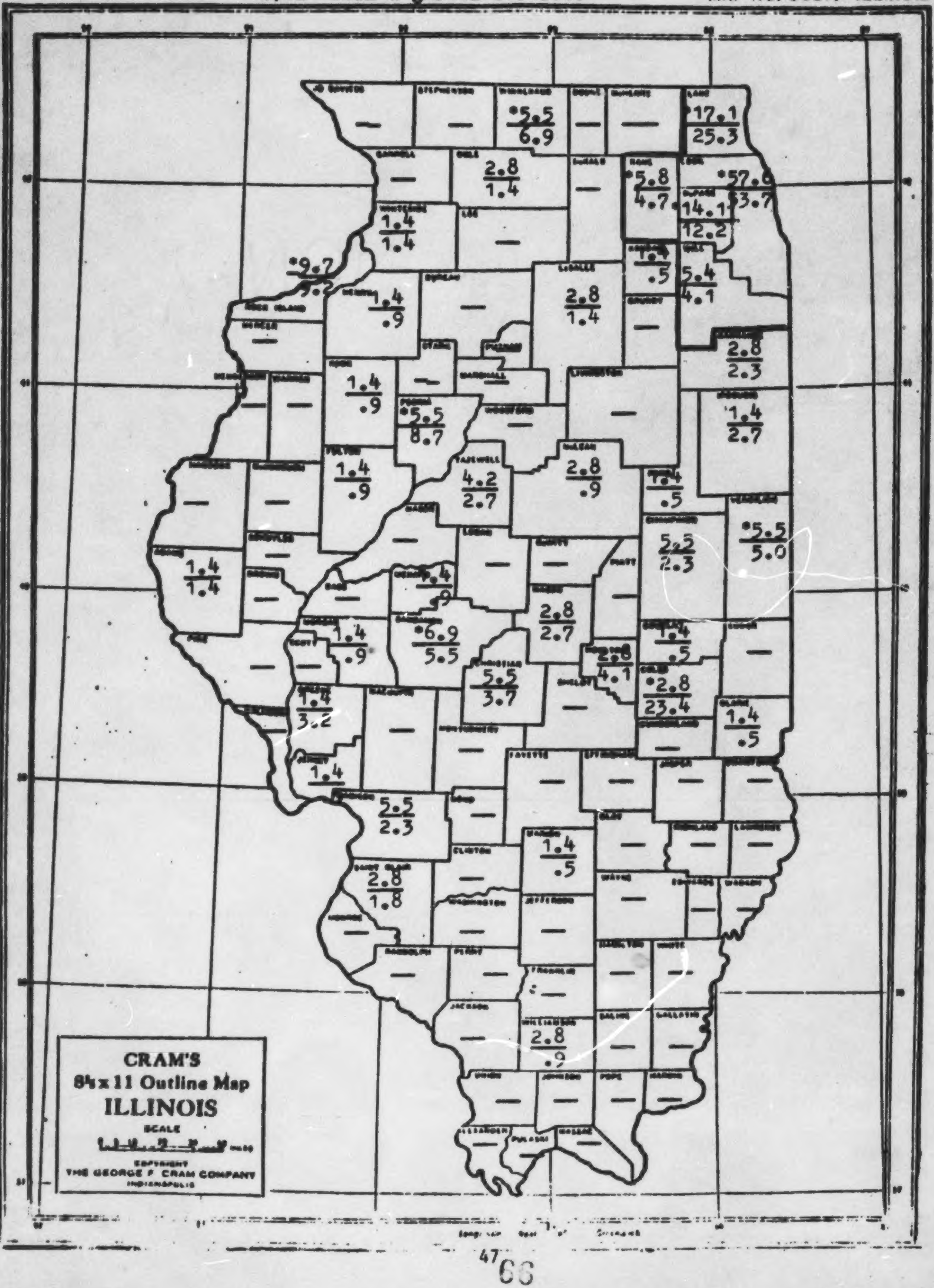
(Source: Dun & Bradstreet file)
% Basis

Chicago area
Firms 205
Employees 434

0782--Lawn & garden services

MAP NO. C0511-ILLINOIS

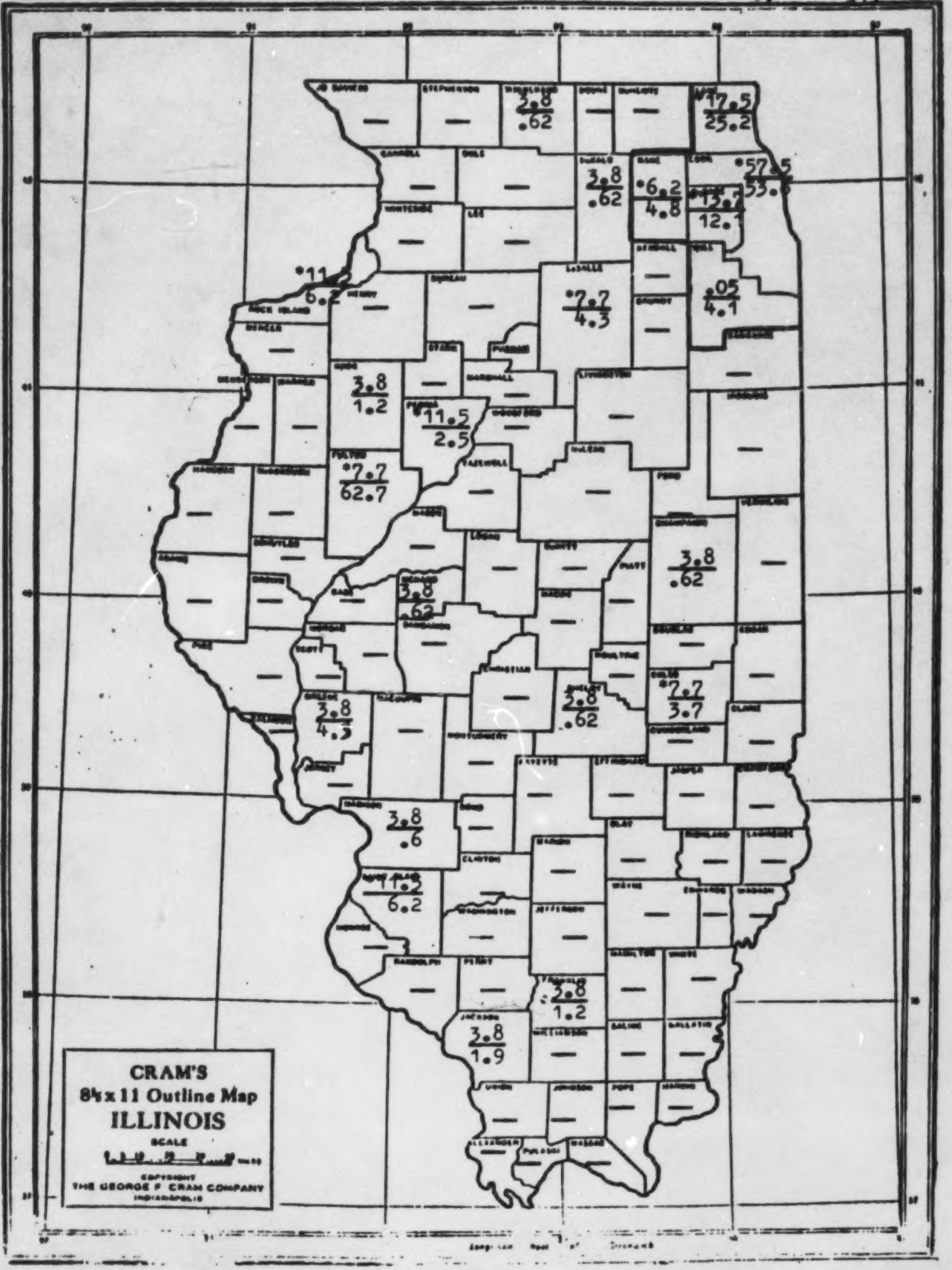
SIU


*5.5 / 6.9
17.1 / 25.3
2.8 / 1.4
*5.8 / 4.7
*57.6 / 53.7
14.1 / 12.2
1.4 / 1.4
*9.7 / 9.2
1.4 / .9
1.4 / .5
5.4 / 4.1
2.8 / 1.4
2.8 / 2.3
1.4 / .9
*5.5 / 8.7
1.4 / 2.7
1.4 / .9
4.2 / 2.7
2.8 / .9
1.4 / .5
5.5 / 2.3
*5.5 / 5.0
1.4 / 1.4
1.4 / .9
2.8 / 2.7
1.4 / .9
*6.9 / 5.5
2.8 / 4.1
1.4 / .5
5.5 / 3.7
*2.8 / 23.4
1.4 / 3.2
1.4 / .5
1.4
5.5 / 2.3
1.4 / .5
2.8 / 1.8
2.8 / .9
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

(Source: Dun & Bradstreet file)
% Basis

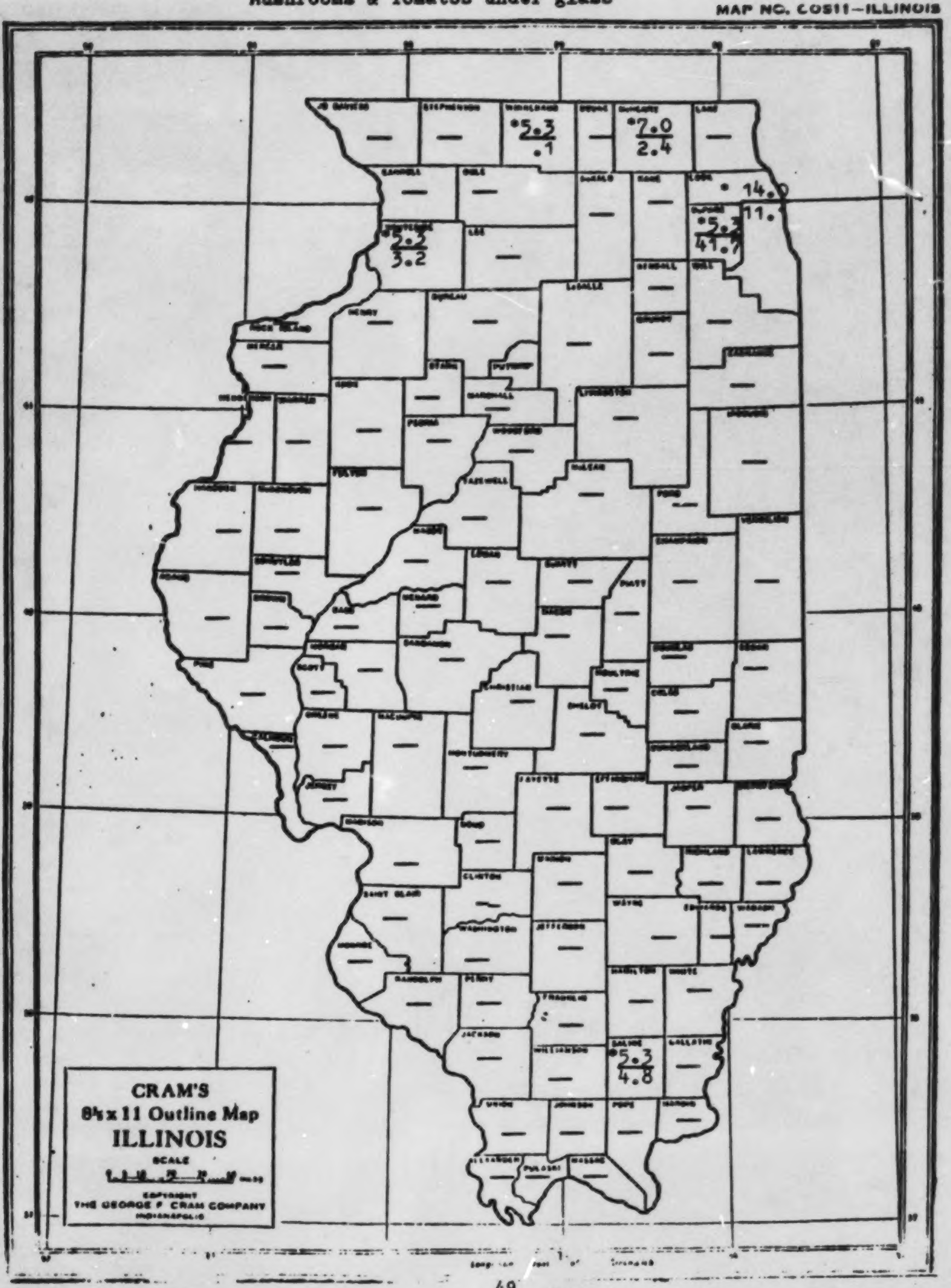
0783--Tree Services

Downstate		**Chicago area**	
Firms	Employees	Firms	Employees
26	161	80	214


MAP CO. COSIT ILLINOIS
3.8 / .62
17.5 / 25.2
3.8 / .62
*6.2 / 4.8
*57.5 / 53.6
*13.7 / 12.1
*11 / 6.2
.05 / 4.1
*7.7 / 4.3
3.8 / 1.2
*11.5 / 2.5
*7.7 / 62.7
3.8 / .62
3.8 / .62
3.8 / 4.3
3.8 / .62
*7.7 / 3.7
3.8 / .6
11.2 / 6.2
3.8 / 1.2
3.8 / 1.9
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

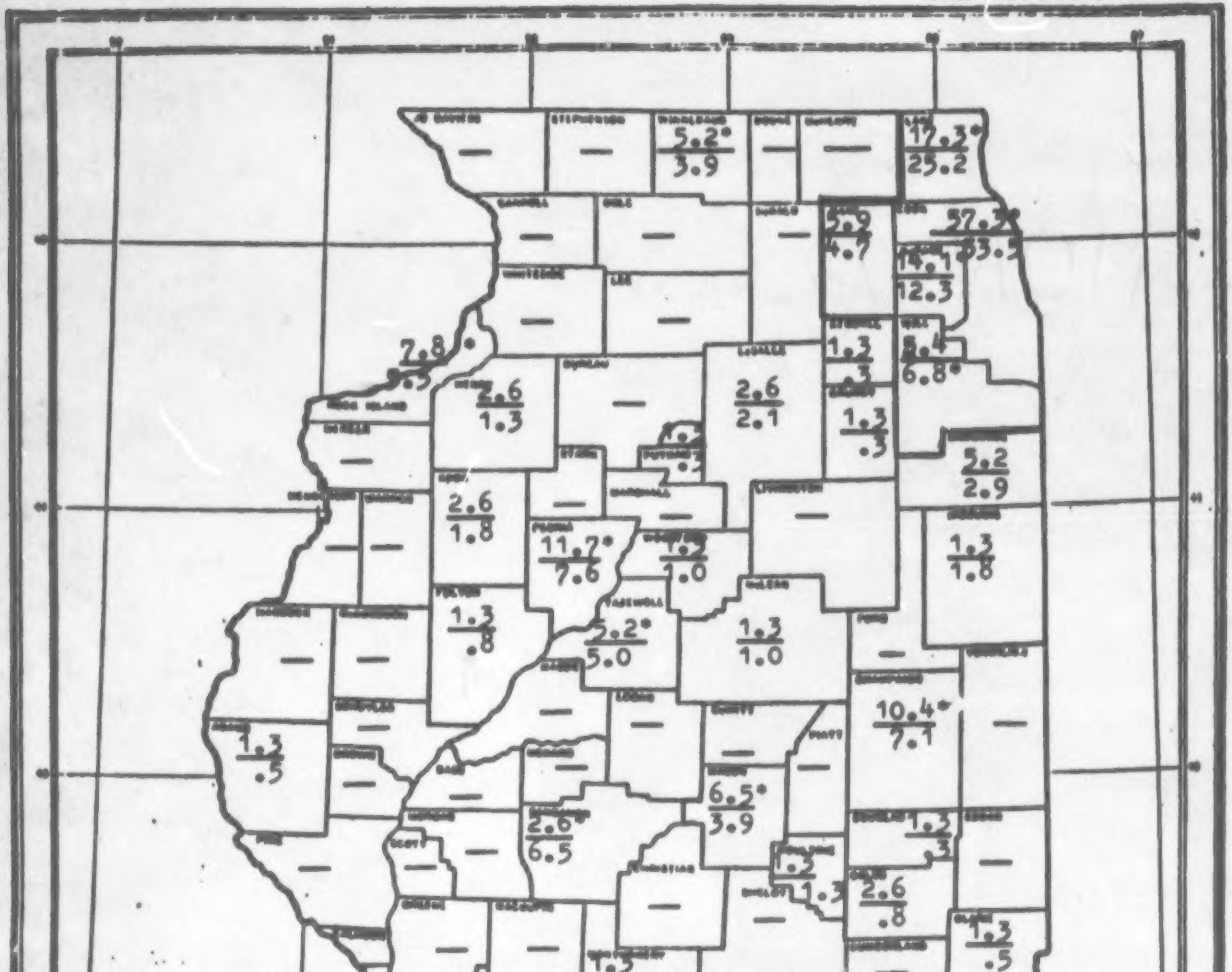
Total farms 57 (Agric. census)
Sq ft. under glass 1,371, 999 (% basis)

Mushrooms & Tomatos under glass


MAP NO. C0511—ILLINOIS
•5.3
.1
•7.0
2.4
• 14.0
11.
•5.3
41.7
2.2
3.2
•5.3
4.8
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

DOWNSTATE		0781--Landscape counseling & planning)	CHICAGO AREA	
Firms	Employees	(Source: Dun & Bradstreet File)	Firms	Employees
77	382	% Basis	220	749

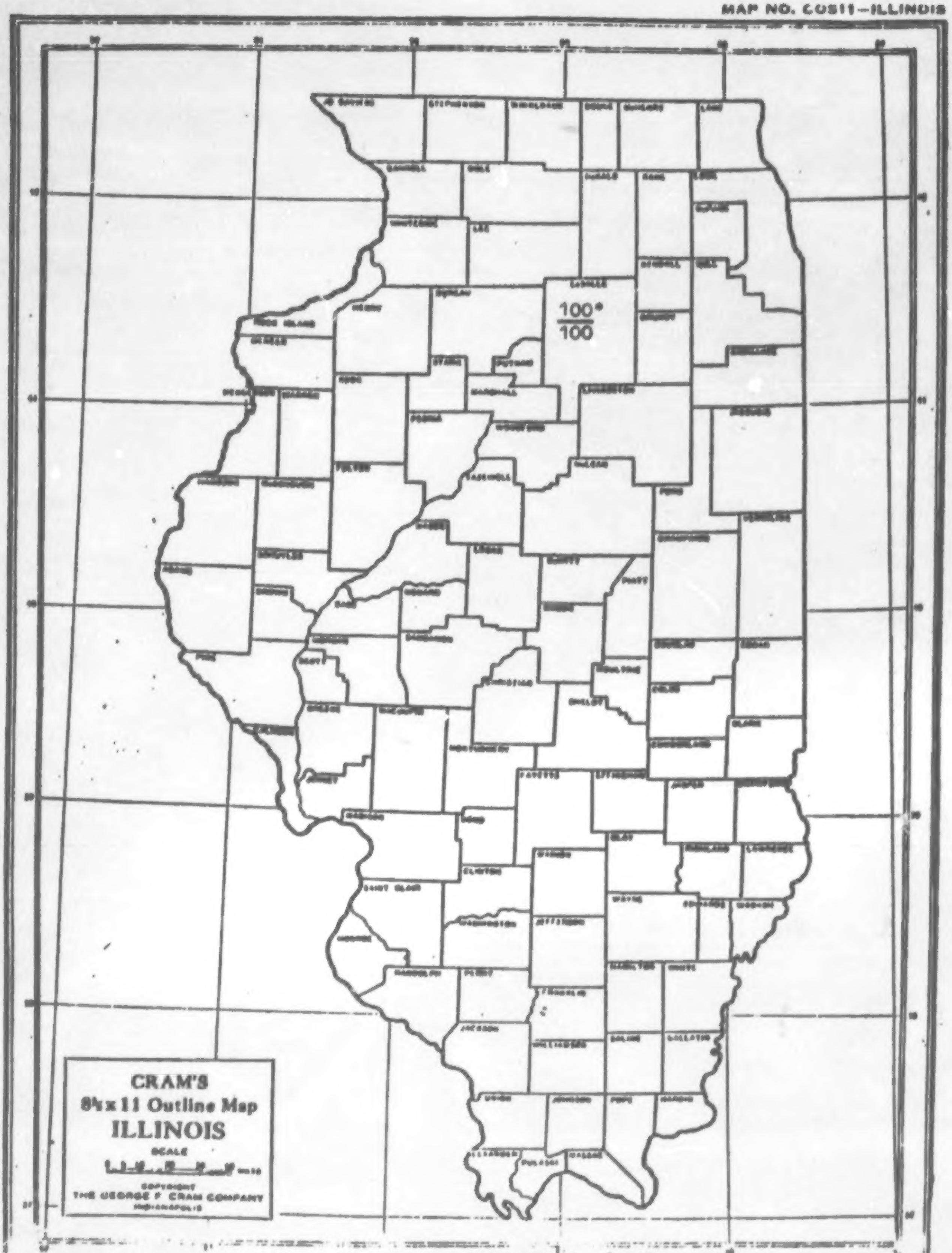
MAP NO. CO811-ILLINOIS


5.2*
3.9
17.3*
25.2
5.9
4.7
37.3*
53.5
14.1
12.3
1.3
.3
5.4
6.8*
7.8*
5.5
2.6
1.3
2.6
2.1
1.3
.3
5.2
2.9
2.6
1.8
11.7*
7.6
1.3
1.0
1.3
1.8
1.3
.8
5.2*
5.0
1.3
1.0
10.4*
7.1
1.3
.5
6.5*
3.9
2.6*
6.5
1.3
.3
1.3
.3
2.6
.8
1.3
.5
1.3
2.1
1.3
.8
1.3
1.8
2.6
1.0
2.6
.5
1.3
.3
2.6
1.3
1.3
1.0
2.6
.5
2.6*
30.1
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

0821--Tree seed gathering & extracting services

(Source: Dun & Bradstreet file)

MAP NO. C0511—ILLINOIS


100°
100
CRAM'S
8½x11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

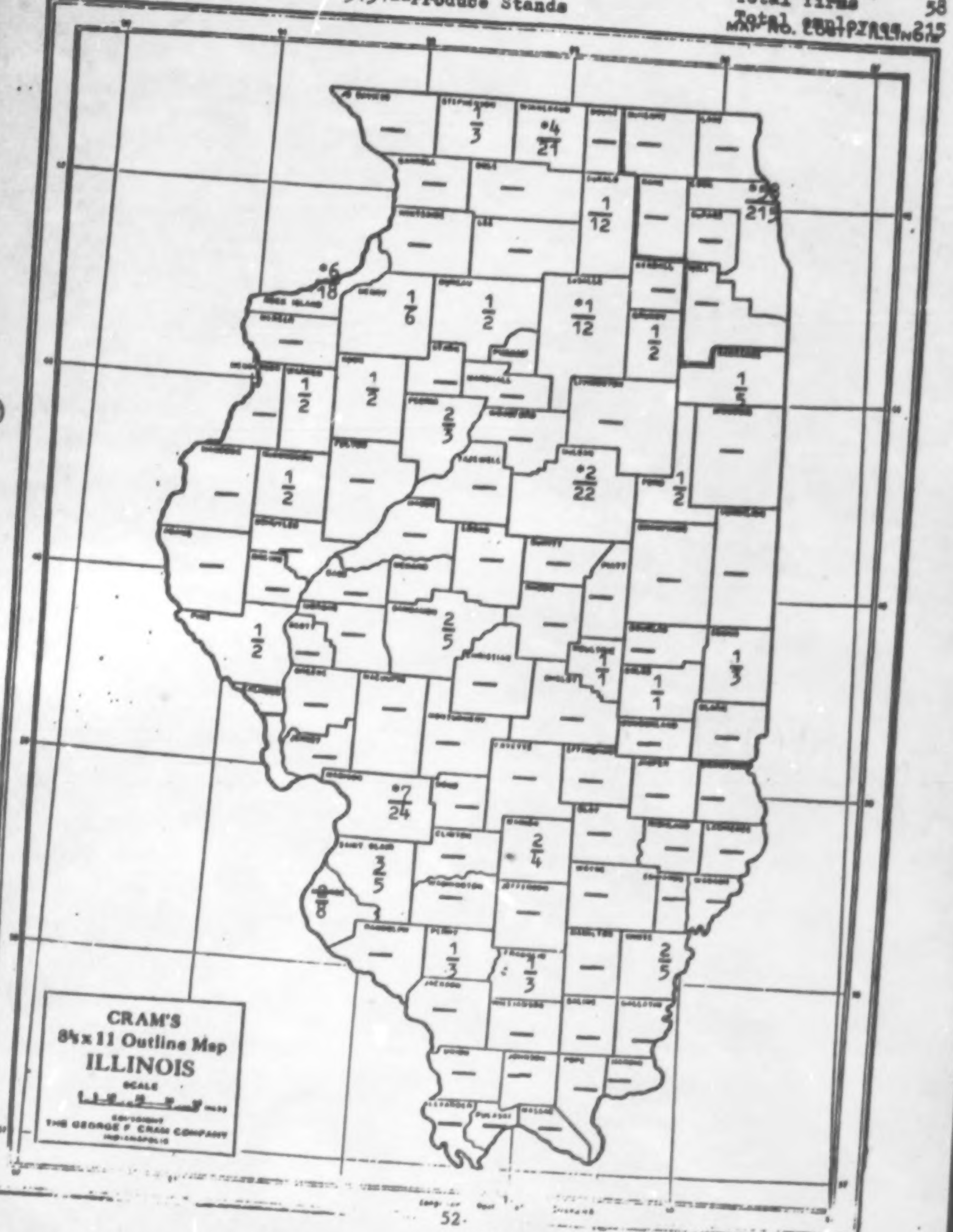
SIU

Downstate
Total firms 49
Total employees 178

(Source: Dun & Bradstreet file)

Chicago area
Total firms 58
Total employees 215

5431--Produce Stands

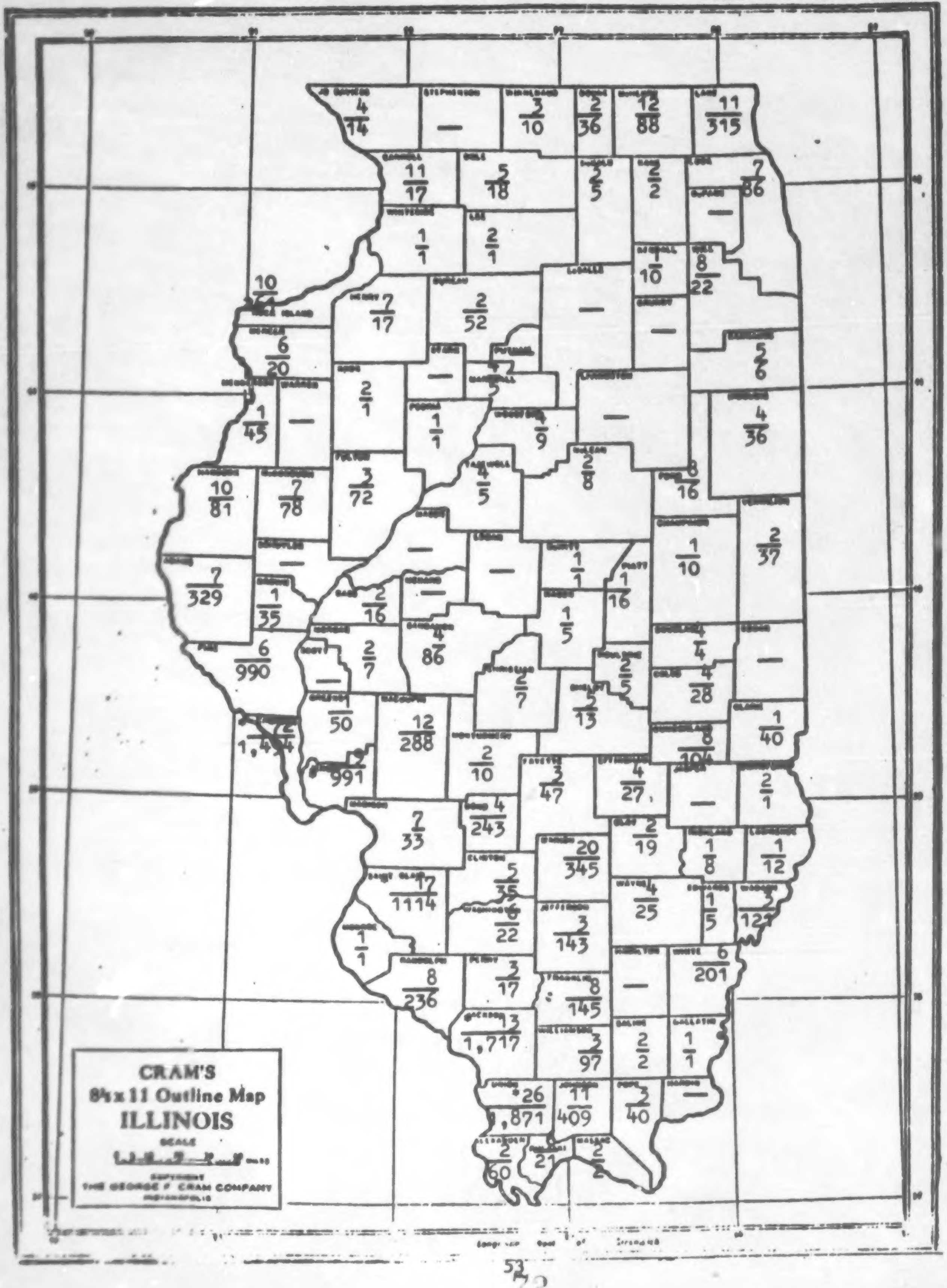

MAP NO. C-OUTL-ILLINOIS
1/3
*4/21
1/12
*58/215
*6/18
1/6
1/2
*1/12
1/2
1/2
1/2
2/3
1/5
1/2
*2/22
1/2
1/2
2/5
1/1
1/1
1/3
*7/24
2/4
3/5
8
1/3
1/3
2/5
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

Total farms 484
Total acres 13,133

(Agric. census)

Deciduous fruit trees--0175

MAP NO. C0511—ILLINOIS

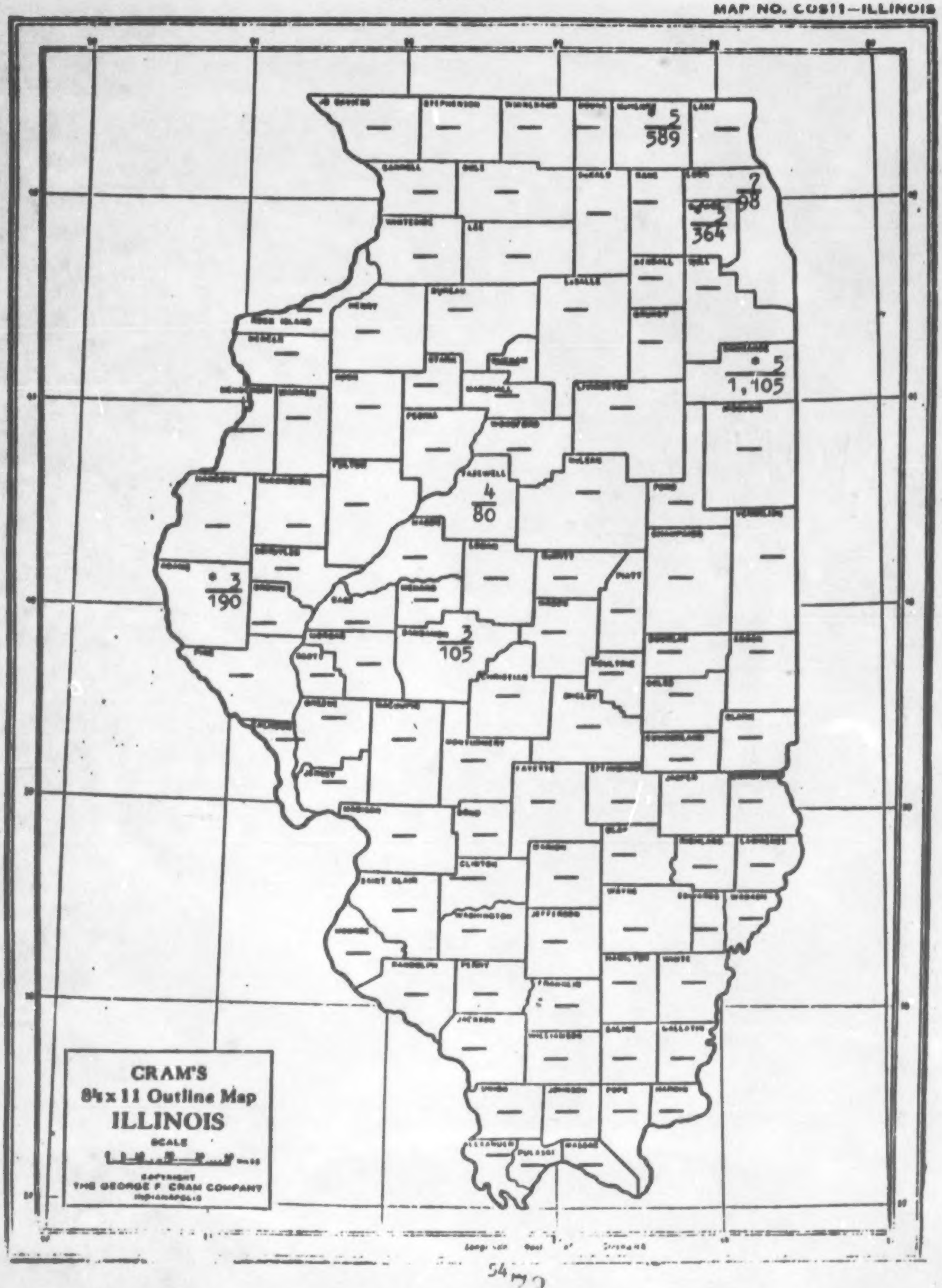

4/14
—
3/10
2/36
12/88
11/315
11/17
5/18
2/5
2/2
7/86
—
1/1
2/1
1/10
8/22
10/14
7/17
2/52
—
—
6/20
—
5/6
2/1
—
1/1
1/45
—
9
—
4/36
3/72
4/5
2/8
8/16
10/81
7/78
—
—
1/10
2/37
7/329
1/35
2/16
—
1/1
1/16
—
6/990
—
2/7
4/86
1/5
4/4
—
2/7
2/5
4/28
1/50
12/288
5/13
1/40
2/1,454
2/10
8/104
12/991
3/47
4/27
—
2/1
7/33
4/243
20/345
2/19
1/8
1/12
17/1114
5/35
4/25
1/5
3/12
6/22
3/143
1/1
8/236
3/17
8/145
—
6/201
13/1,717
3/97
2/2
1/1
—
26/1,871
11/409
3/40
2/60
21
2/2
CRAM'S
8½x11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

Total farms 50
Total acres 3,973

(Agric. census)

Sod Harvest

MAP NO. C0511—ILLINOIS

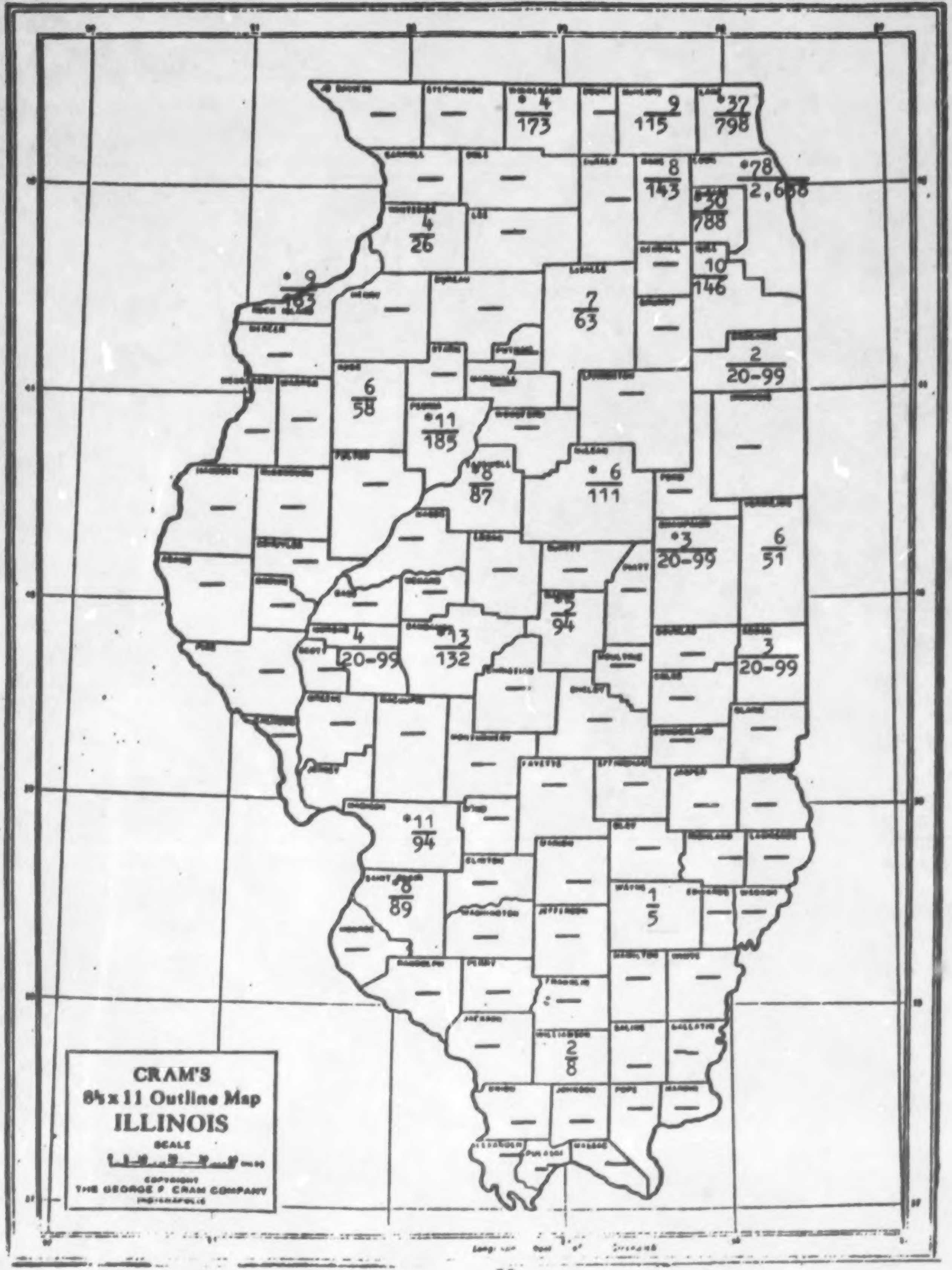

McHenry
5
589
Cook
7
98
DuPage
5
364
Kankakee
• 5
1,105
Tazewell
4
80
Adams
• 3
190
Sangamon
3
105
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

Downstate (Source: Dun & Bradstreet file) **Chicago area**

Total firms	116	Total firms	172
Total employees	1,631	Total employees	4,628

7997--Private Country Clubs

MAP NO. CO511—ILLINOIS


*4
173
9
115
*37
798
8
143
*78
2,638
*30
788
4
26
*9
163
10
146
7
63
2
20-99
6
58
*11
185
*8
87
*6
111
*3
20-99
6
51
*5
94
4
20-99
*13
132
3
20-99
*11
94
*8
89
1
5
2
8
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

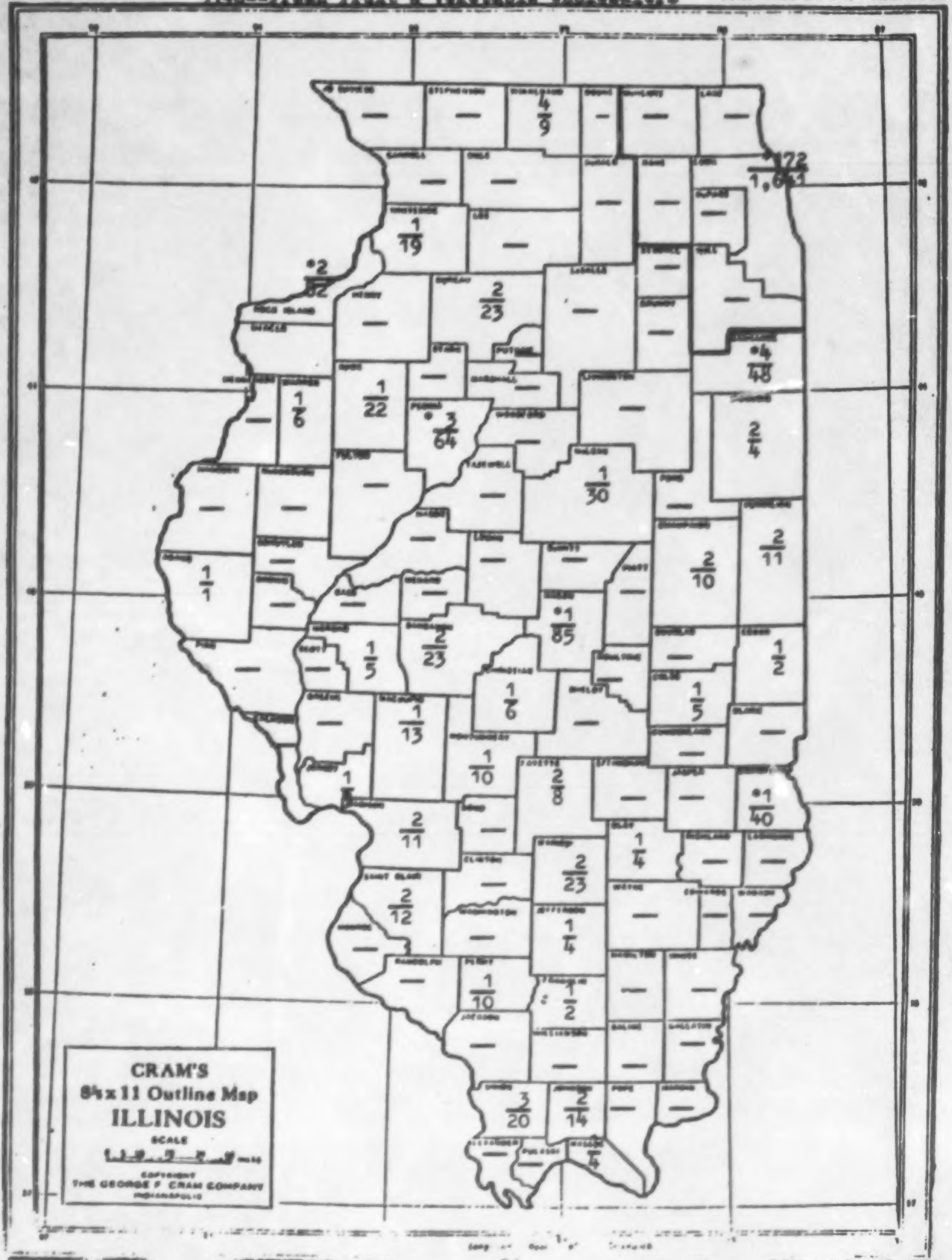
Downstate (Source: Dun & Bradstreet file) **Chicago area**

Total firms 64 Total firms 172

Total employees 633 Total employees 1,641

5148--Fresh Fruit & Vegetable Wholesalers

MAP NO. CO511--ILLINOIS


4/9
*172/1,641
1/19
*2/82
2/23
*4/48
1/6
1/22
*3/64
2/4
1/30
1/1
2/11
2/10
*1/85
1/5
2/23
1/2
1/6
1/5
1/13
1/10
2/8
*1/40
2/11
1/4
2/23
2/12
1/4
1/10
1/2
3/20
2/14
1/4
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

Total farms 180
Total acres 655

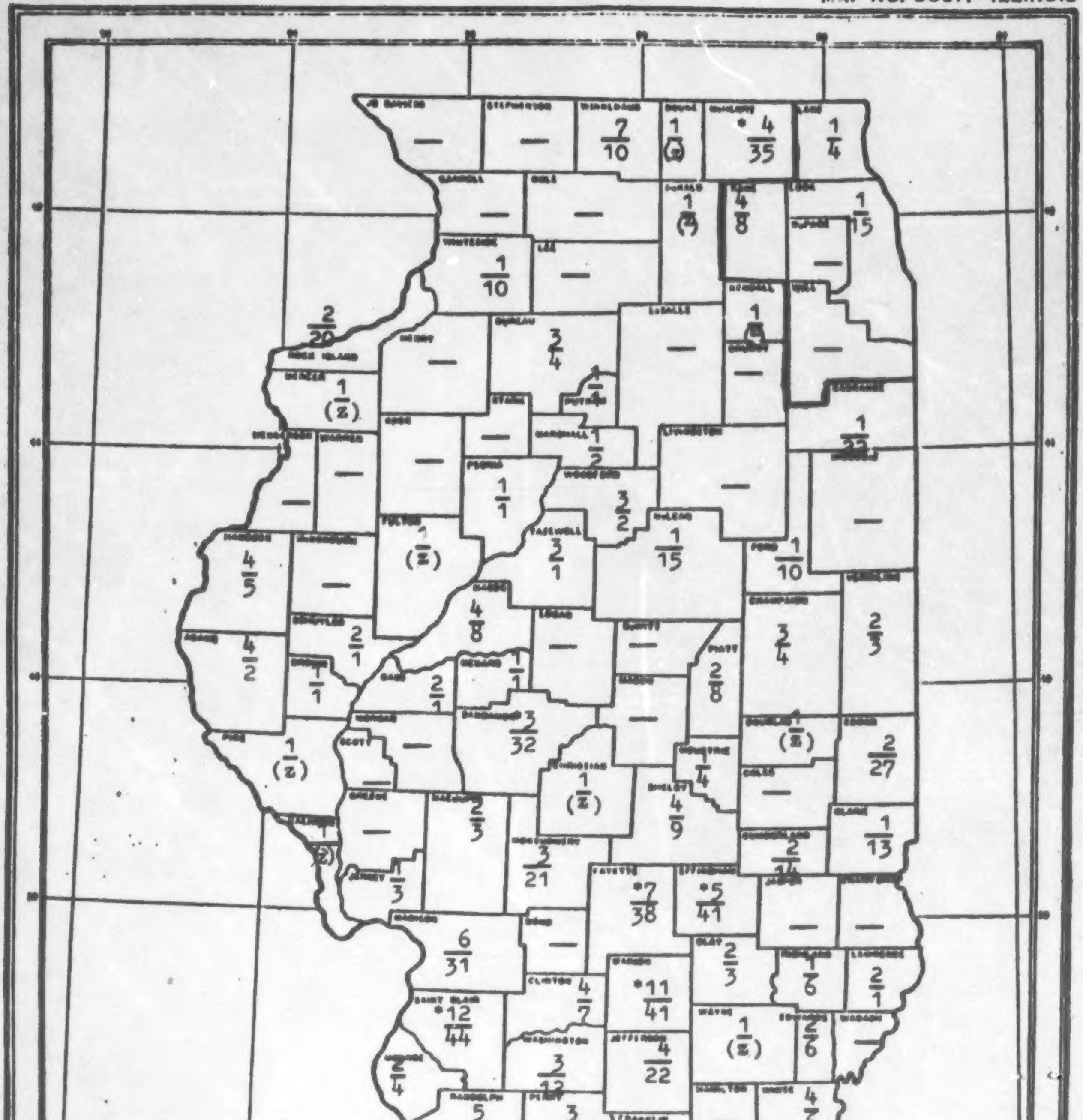
(Agric. census)

$(z) = \frac{1}{2}$ income reported

Berries--0171

MAP NO. C0511-ILLINOIS

SIU

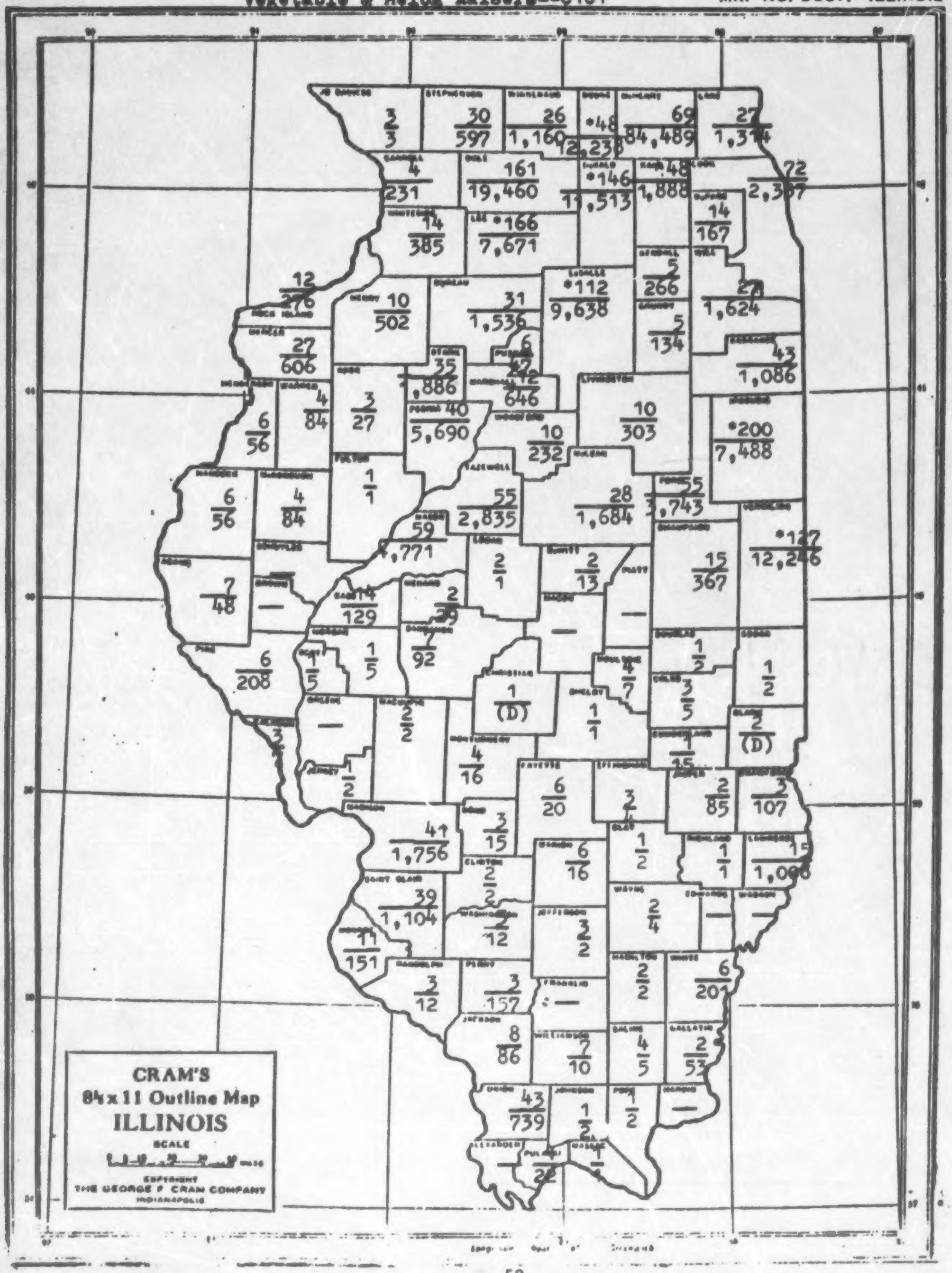

CRAM'S
8¼ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS
Jo Daviess —
Stephenson —
Winnebago 7/10
Boone 1/(z)
McHenry *4/35
Lake 1/4
Carroll —
Ogle —
DeKalb 1/(z)
Kane 4/8
Cook 1/15
DuPage —
Whiteside 1/10
Lee —
Rock Island 2/20
Henry —
Bureau 3/4
LaSalle —
Kendall 1/(z)
Grundy —
Will —
Mercer 1/(z)
Putnam 1/(z)
Stark —
Knox —
Marshall 1/(z)
Livingston —
Kankakee 1/32
Iroquois —
Henderson —
Warren —
Peoria 1/1
Woodford 3/2
Hancock 4/5
McDonough —
Fulton 1/(z)
Tazewell 3/1
McLean 1/15
Ford 1/10
Mason 4/8
Adams 4/2
Schuyler 2/1
Brown 1/1
Cass 2/1
Menard 1/1
Logan —
DeWitt —
Piatt 2/8
Champaign 3/4
Vermilion 2/3
Macon —
Morgan —
Sangamon 3/32
Pike 1/(z)
Scott —
Christian 1/(z)
Moultrie 1/4
Shelby 4/9
Douglas 1/(z)
Edgar 2/27
Coles —
Greene —
Macoupin 2/3
Montgomery 3/21
Calhoun 1/(z)
Jersey 1/3
Cumberland 2/14
Clark 1/13
Fayette *7/38
Effingham *5/41
Jasper —
Crawford —
Madison 6/31
Bond —
Clay 2/3
Richland 1/6
Lawrence 2/1
Clinton 4/7
Marion *11/41
St. Clair *12/44
Wayne 1/(z)
Edwards 2/6
Wabash —
Monroe 2/4
Washington 3/12
Jefferson 4/22
Randolph 2/5
Perry 2/3
Franklin —
Hamilton —
White 4/6
Jackson 2/7
Williamson 1/3
Saline 1/1
Gallatin —
Union 7/54
Johnson 1/1
Pope 1/(z)
Hardin —
Alexander —
Pulaski —
Massac 1/2

Total firms 2,053
Total acres 127,825

D=Data withheld

U.S. Agricultural Census--1974
Vegetable & Melon Raisers--0161

MAP NO. C0511-ILLINOIS


3/3
30/597
26/1,160
*48/12,238
69/84,489
27/1,314
4/231
161/19,460
*146/11,513
*48/1,888
72/2,357
14/385
*166/7,671
14/167
12/276
10/502
31/1,536
*112/9,638
5/266
27/1,624
27/606
5/134
35/1,886
6/27
42/646
43/1,086
6/56
4/84
3/27
40/5,690
10/232
10/303
*200/7,488
1/1
55/2,835
28/1,684
55/3,743
6/56
4/84
59/4,771
2/1
2/13
15/367
*127/12,246
7/48
—
14/129
2/39
—
—
6/208
1/5
1/5
7/92
4/7
1/2
1/2
—
2/2
1/(D)
1/1
3/5
2/(D)
3
1/2
4/16
6/20
3/4
1/15
2/85
3/107
41/1,756
3/15
1/2
1/1
15/1,098
6/16
2/2
39/1,104
2/12
3/2
2/4
—
—
11/151
3/12
3/157
2/2
6/201
—
8/86
7/10
4/5
2/53
43/739
1/2
1/2
—
—
22
—
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

58

77

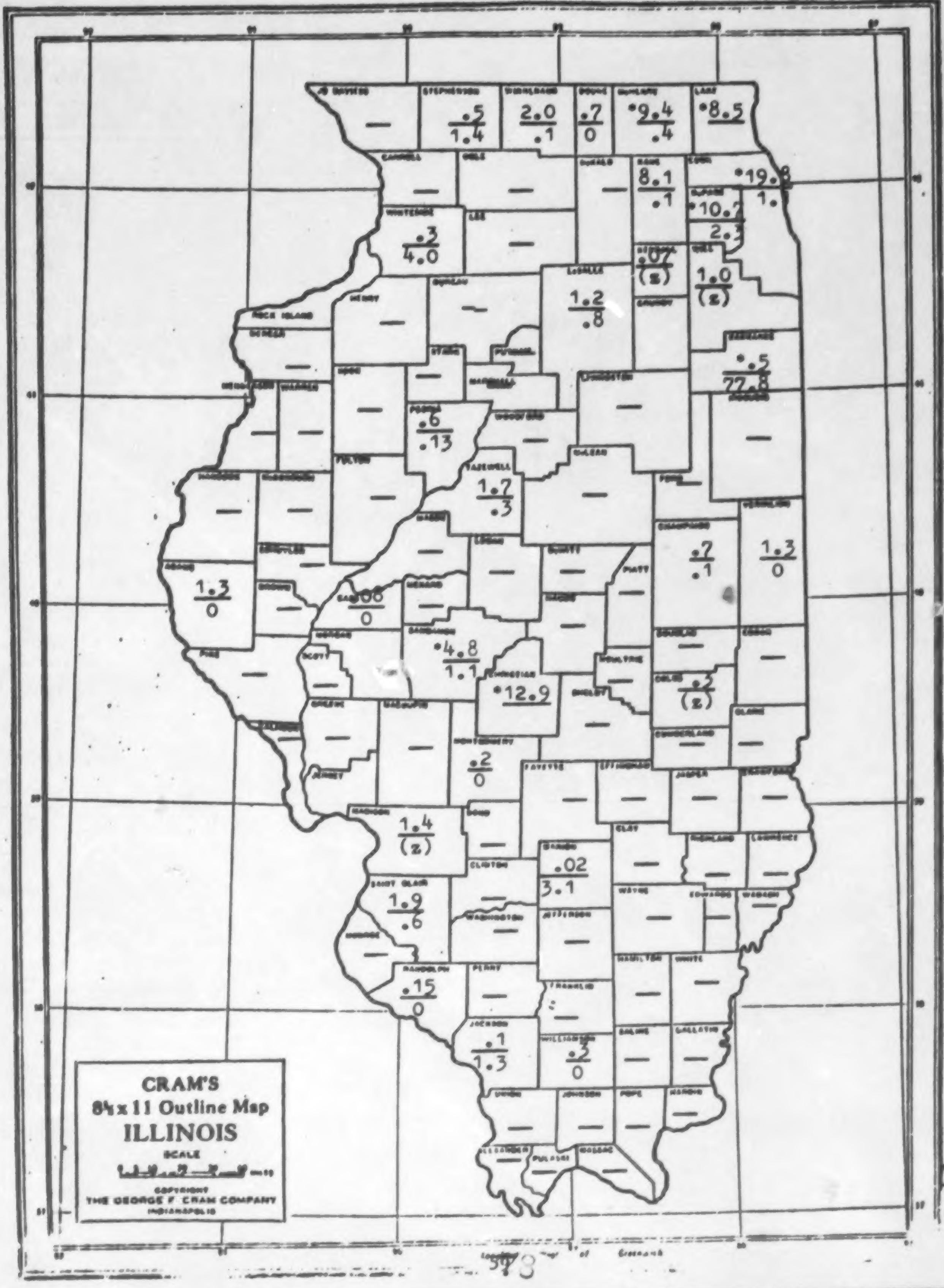
Total sq. ft. under glass-8,919,841
Total open acres-780

(Agric. census)
(% basis)

Cut flowers, greens, bedding & other florist plants

(z)=$\frac{1}{2}$ income reported

MAP NO. CO511--ILLINOIS



.5 / 1.4
2.0 / .1
.7 / 0
*9.4 / .4
*8.5
8.1 / .1
*19.8 / 1.
*10.7 / 2.3
.3 / 4.0
.07 / (z)
1.0 / (z)
1.2 / .8
*.5 / 77.8
.6 / .13
1.7 / .3
.7 / .1
1.3 / 0
1.3 / 0
.08 / 0
*4.8 / 1.1
*12.9
.2 / (z)
.2 / 0
1.4 / (z)
.02 / 3.1
1.9 / .6
.15 / 0
.1 / 1.3
.3 / 0
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

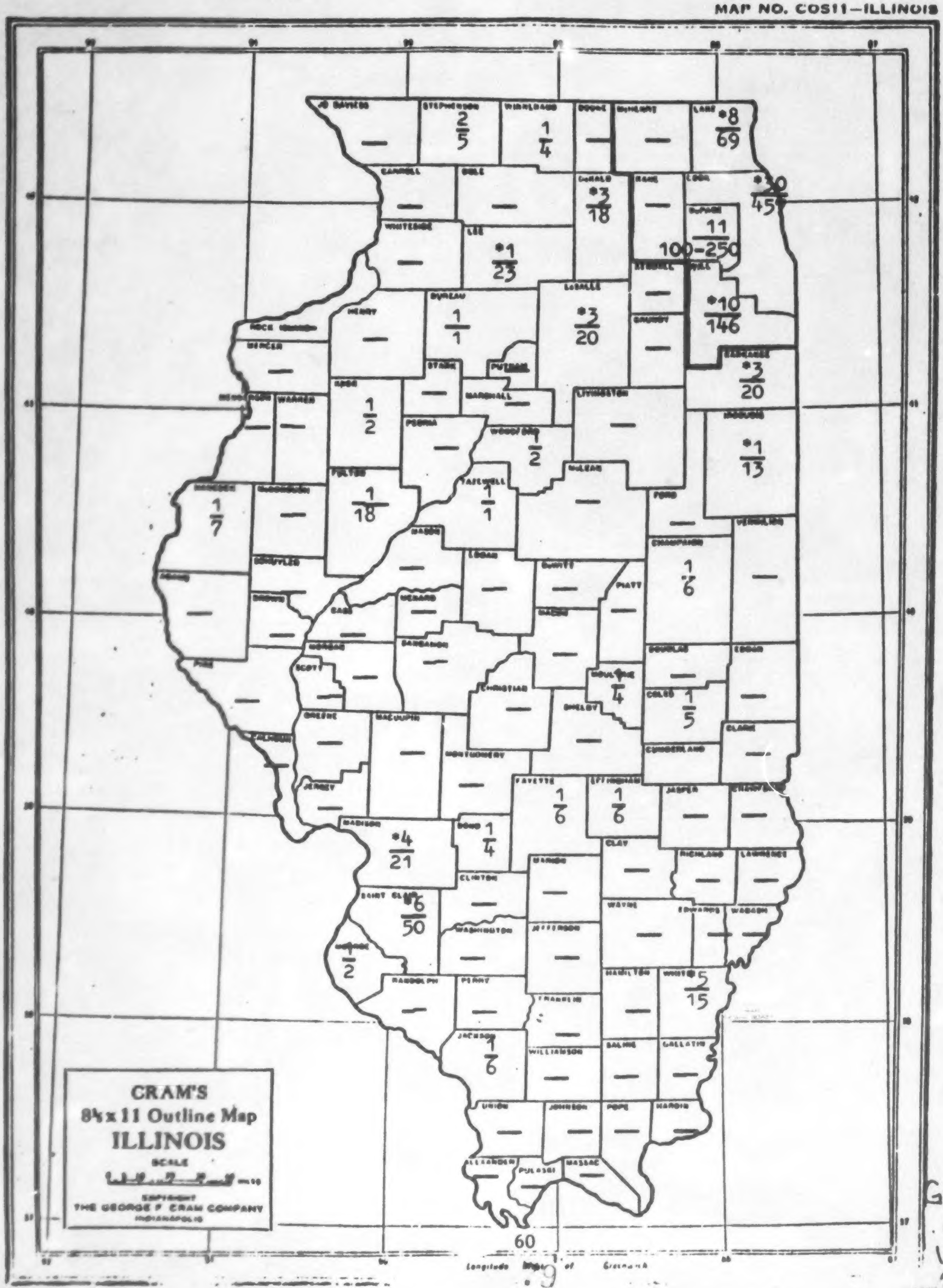
SIU

G41
.A1
196
07

(Source: Dun & Bradstreet file)

Downstate		Chicago area	
Total firms	44	Total firms	59
Total employees	116	Total employees	847

7992--Golf Course Maintenance (Public)


MAP NO. CO511—ILLINOIS
Stephenson 2/5
Winnebago 1/4
Lake *8/69
DeKalb *3/18
Cook *30/45
DuPage 11/100-250
Lee *1/23
Will *10/146
Bureau 1/1
LaSalle *3/20
Kankakee *3/20
Knox 1/2
Woodford 2
Iroquois *1/13
Hancock 1/7
Fulton 1/18
Tazewell 1/1
Champaign 1/6
Moultrie 4
Coles 1/5
Fayette 1/6
Effingham 1/6
Madison *4/21
Bond 1/4
Saint Clair *6/50
Monroe 1/2
White *5/15
Jackson 1/6
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS
Longitude West of Greenwich

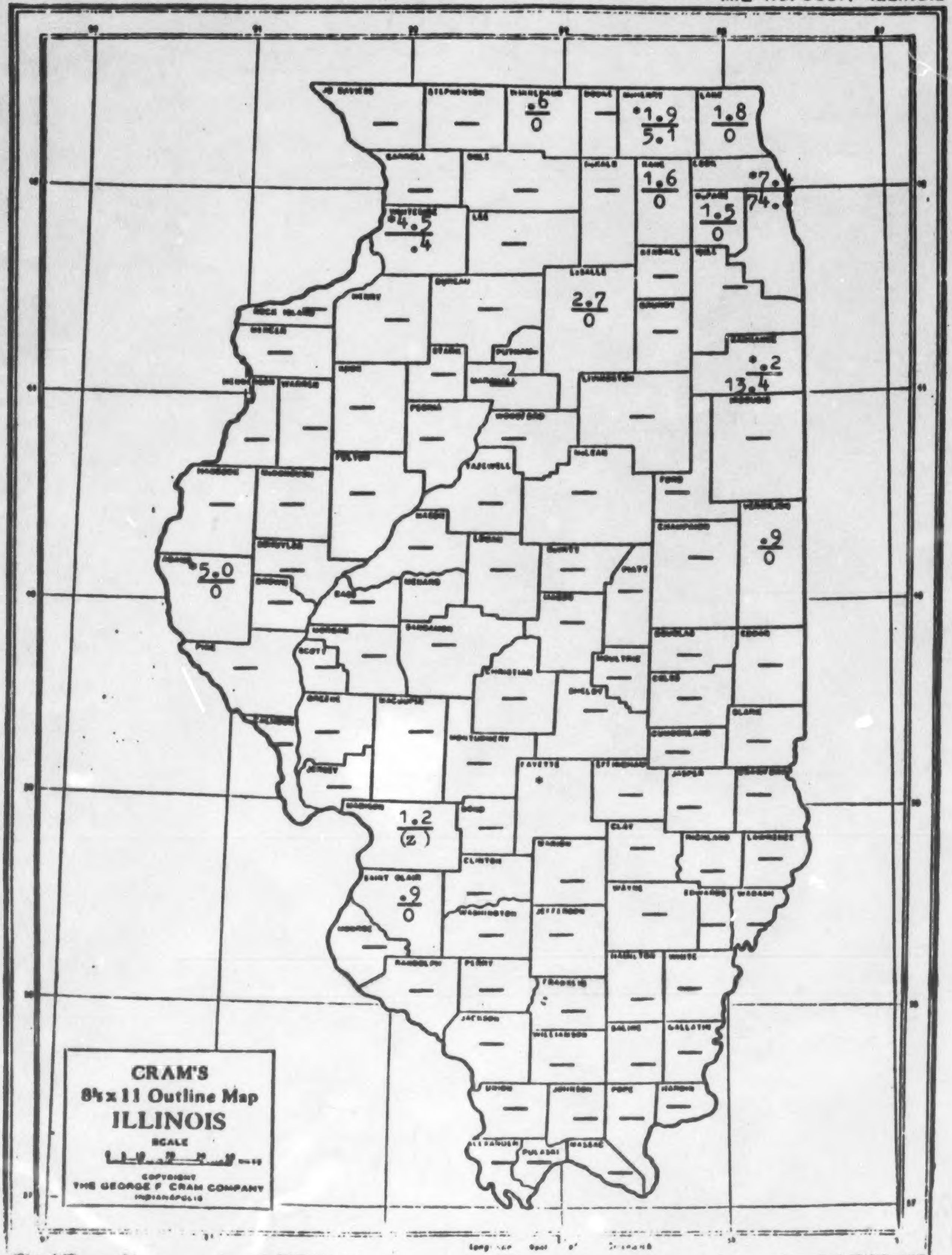
G411
.A1
196
C3

Sq. ft. under glass-640,453
open acres-980

(Agric. census)
(% basis)

Flower seeds, veg. seeds, veg. plants

z=z income reported


MAP NO. C0511-ILLINOIS
.6
0
*1.9
5.1
1.8
0
1.6
0
*7.4
74.8
1.5
0
*4.5
.4
2.7
0
*.2
13.4
.9
0
*5.0
0
1.2
(z)
.9
0
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

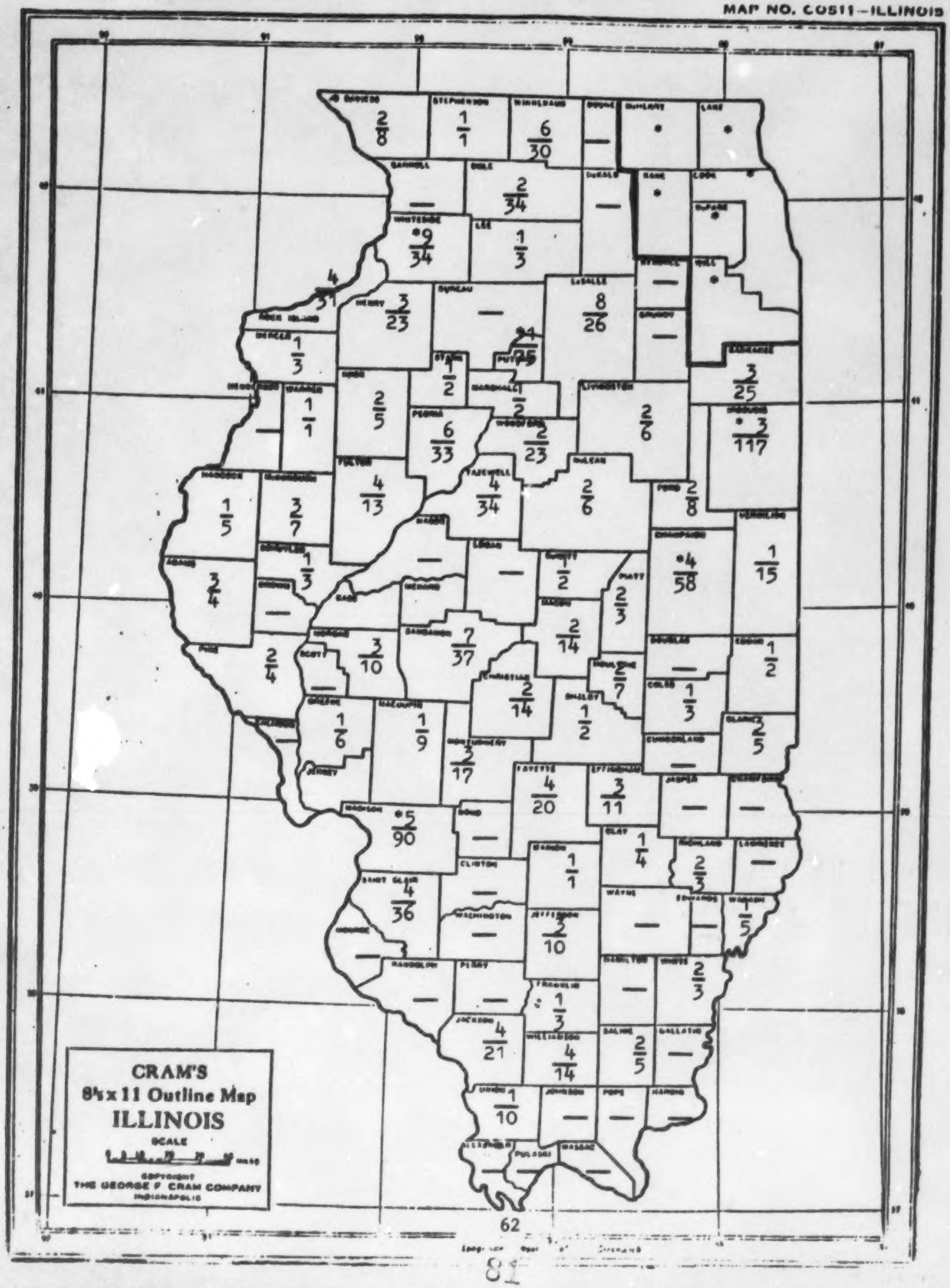
Downstate
firms 157
employees 1,031

(Source: Dun & Bradstreet file)

Chicago area
*No data
see agric. census

0181--Ornamental floriculture & nursery production

SIU


MAP NO. C0511—ILLINOIS
JO DAVIESS 2/8
STEPHENSON 1/1
WINNEBAGO 6/30
BOONE —
McHENRY •
LAKE •
CARROLL —
OGLE 2/34
DE KALB —
KANE •
COOK •
DU PAGE •
WHITESIDE *9/34
LEE 1/3
ROCK ISLAND 4/31
KENDALL —
WILL •
HENRY 3/23
BUREAU —
LA SALLE 8/26
GRUNDY —
MERCER 1/3
PUTNAM *4/25
STARK 1/2
MARSHALL 2
KANKAKEE 3/25
HENDERSON —
WARREN 1/1
KNOX 2/5
PEORIA 6/33
WOODFORD 2/23
LIVINGSTON 2/6
IROQUOIS *3/117
HANCOCK 1/5
McDONOUGH 3/7
FULTON 4/13
TAZEWELL 4/34
McLEAN 2/6
FORD 2/8
MASON —
LOGAN —
VERMILION 1/15
SCHUYLER 1/3
ADAMS 3/4
BROWN —
CASS
MENARD
DE WITT 1/2
PIATT 2/3
CHAMPAIGN *4/58
MACON 2/14
MORGAN 3/10
SCOTT —
PIKE 2/4
SANGAMON 7/37
DOUGLAS —
EDGAR 1/2
MOULTRIE 2/7
CHRISTIAN 2/14
COLES 1/3
SHELBY 1/2
CALHOUN
GREENE 1/6
MACOUPIN 1/9
JERSEY
MONTGOMERY 3/17
CUMBERLAND —
CLARK 2/5
FAYETTE 4/20
EFFINGHAM 3/11
JASPER —
CRAWFORD —
MADISON *5/90
BOND —
CLAY 1/4
RICHLAND 2/3
LAWRENCE —
MARION 1/1
CLINTON —
ST. CLAIR 4/36
WAYNE —
EDWARDS —
WABASH 1/5
WASHINGTON —
JEFFERSON 3/10
MONROE —
RANDOLPH —
PERRY —
HAMILTON —
WHITE 2/3
FRANKLIN 1/3
JACKSON 4/21
WILLIAMSON 4/14
SALINE 2/5
GALLATIN —
UNION 1/10
JOHNSON —
POPE —
HARDIN —
ALEXANDER
PULASKI
MASSAC —
CRAM'S
8½ x 11 Outline Map
ILLINOIS
SCALE
COPYRIGHT
THE GEORGE F. CRAM COMPANY
INDIANAPOLIS

APPENDIX B

LIST OF BUSINESS AREAS
AND
BUSINESS TYPES

82

AGRIBUSINESS INDUSTRIES

1. Horticulture
2. Agricultural Supplies
3. Agricultural Production
4. Agricultural Products
5. Agricultural Mechanics
6. Conservation
7. Natural Resources
8. Other

HORTICULTURAL INDUSTRY BUSINESS AREAS

1. Vegetable, Fruit & Flower Growers
2. Landscape
3. Nursery & Greenhouse Production & Woody Plant Maintenance
4. Retail Nurseries
5. Wholesale and Retail Fruit
6. Wholesale and Retail Florist
7. Turf and Grounds Maintenance

BUSINESS TYPES

1. Field-Grown Vegetables
2. Berries
3. Orchards
4. Field and Greenhouse-Grown Flowers
5. Greenhouse-Grown Vegetables
6. Landscape Architects
7. Landscape Contractors
8. Plant Rental Services
9. Wholesale Nurseries
10. Wholesale Greenhouses
11. Tree Seed Gathering & Extracting Services
12. Sod Farms
13. Arborist Services
14. Flower Seeds, Vegetable Seeds & Vegetable Plants
15. Independent Retail Nurseries
16. Department Store & Discount Chain Garden Centers
17. Wholesale Fruit Markets
18. Fruit Stands, Retail
19. Wholesale Florists
20. Retail Florists
21. Golf Course Maintenance
22. Lawn and Garden Services
23. Public Garden Maintenance

APPENDIX C

PRELIMINARY LIST OF JOB TITLES

PRELIMINARY LIST OF JOB TITLES FOR HORTICULTURE

AREA I

Vegetables

Vegetable grower
Supervisor of vegetable farm
Full-time farmworker
Seasonal laborer
Harvest contractor
Harvest worker
Field hauler
Seed potato arranger
Seed potato cutter
Grader - Inspector   Row boss, hoeing
Weeder - thinner
Irrigator (gravity flow, sprinkler, valve pipe)
Airplane pilot
Farm machine operator
Farm machine tender
Mushroom growth media mixer
Mycologist - mushroom spawn maker

Fruits

Farmer (orchardist, berry grower)
Supervisor of fruit farm
Full-time farmworker
Seasonal laborer
Harvest contractor
Picking crew supervisor
Fruit harvest worker
Field hauler
Inspector - Grader
Orchard prunner
Orchard prunner helper
Head irrigator
Irrigator - valve pipe, gravity flow, sprinkler
Airplane pilot
Row boss - hoeing (strawberries)
Farm machine operator
Farm machine tender

Flowers

Grower (field or greenhouse)
Supervisor
Head grader
Grader Inspectors
Plant propagator
Budder
Full-time farmworker, greenhouse worker, hydroponics worker, etc.
Greenhouse laborer, rose farm laborer, mushroom laborer, etc. (seasonal)
Flower picker
Irrigator - gravity flow, sprinkler, valve
Weeder - thinner
Transplanter
Equipment maintenance person

AREA II

Landscape architect

- Highway landscape architect
- Park landscape architect
- Landscape architect
- Landscape drafter

Landscape contractor

- Hydrosprayer operator
- Landscape gardener - landscaper
- Landscape laborer

AREA III

Wholesale nurseries

- Grower (specialty)
- Supervisor
- Bonsai culturist
- Propagator
- Budder
- Full-time nursery worker, greenhouse worker
- Seasonal laborer
- Field inspector - disease & insect control
- Tree pruner
- Tree pruner helper
- Weeder - thinner
- Irrigator
- Hand sprayer (weed control & disease control)
- Inspector - Grader
- Plant breeder
- Plant pathologist
- Bag & burlap specialist
- Inventory controller
- Tractor operator
- Shipping supervisor
- Delivery person

Wholesale greenhouses

- Owner
- Manager
- Full-time worker
- Seasonal laborer
- Irrigator
- Plant propagator
- Transplanter
- Shipping supervisor

AREA III (continued)

Tree services

- Owner
- Supervisor - crew manager, spray, lawn & tree service
- Supervisor - insect & disease inspection & control
- Supervisor - tree trimming
- Tree surgeon
- Tree surgeon helper
- Tree trimmer - line clearance
- Tree trimmer helper
- Scout - pest control worker
- Hand sprayer
- Plant pathologist

Sod farms

- Grower (Grass farmer)
- Supervisor of sod farm
- Full-time farmworker
- Seasonal laborer
- Field inspector - disease & insect control
- Hydro-spray operator
- Hand sprayer - weed & disease control
- Sod cutter
- Field hauler
- Harvest machine operators
- Inspector - grader
- Turf research technician
- Turf supply sales person

Seed farms, vegetable plants, bedding plants

- Grower
- Supervisor
- Full-time farmworker
- Seasonal laborer
- Plant breeder
- Plant propagator
- Field inspector (disease & insect control)
- Hand sprayer
- Weeder - thinner
- Harvest worker
- Inspector - grader
- Shipping supervisor
- Packer

AREA IV

Retail nursery

- Owner
- Manager - bookkeeper
- Sales manager
- Flower salesperson
- Nursery salesperson
- Lawn & garden equipment salesperson
- Catalog salesperson
- Mechanic
- Inventory controller
- Stock clerk
- Landscape gardener
- Landscape laborer
- Lawn service worker
- Turf consultant
- Turf research technician
- Turf supply salesperson

AREA V

Wholesale produce

- Owner
- Manager
- Bookkeeper
- Inventory control
- Buyer
- Grader
- Warehouse worker

Fruit stands

- Owner
- Manager
- Supervisor
- Grader
- Produce clerk

AREA VI

Wholesale florist

- Wholesale florist
- Manager
- Accountant
- Salesperson
- Shipping clerk
- Delivery person

Retail florist

- Florist (owner)
- Flowershop manager
- General secretary
- Accountant
- Head designer
- Cut flower designer
- Wedding consultant
- Decorator florist
- Florist supply salesperson
- Delivery person

AREA VII

Grounds maintenance

- Supervisor - park workers
- Greens superintendent
- Greenskeeper/groundskeeper* - full-time
- Greenskeeper/groundskeeper* - laborer, seasonal
- Special effects gardener
- Lawnmower repair person

Lawn service

- Owner
- Manager
- Full-time turf worker
- Seasonal turf worker
- Hydrospray operator
- Hand sprayer (weed control)
- Turf consultant
- Turf research technician
- Turf supply salesperson

*Groundskeepers also called grounds caretakers

APPENDIX D

TELEPHONE INTERVIEW FORMS

INTERVIEW SCRIPT

(Dial)

(Locate manager)

Hello. This is ____________________ calling from Southern Illinois University, Carbondale. We are conducting a study of the kinds of jobs available in horticulture in the state of Illinois. We are interested in the job titles you use in your business. Do you have time now to help us with this short questionaire, or may we call back at a more convenient time? (If "yes", to 1; "no" to 5.)

Our goal is to use this information to develop horticultural classes for Illinois high schools, training students in entry-level jobs in several horticultural business areas.

1) I am going to read through a checklist of job titles commonly found in your business area and you can tell me whether you have these jobs. Then I will ask which jobs your new employees start with.

a) Do you have a _____________? How many are employed at this job? (Read through list)

b) For which of these jobs would you hire a high school graduate with no experience? For which of these jobs would you hire a high school graduate who has taken horticulture courses? (Read through list again)

2) How many people are employed at your busiest season? Can you give me an estimate of how many of these are full time?

3) (For a large firm) Can you give me the name of a smaller firm employing less than 10 people located in your area?

4) Thank you very much for your cooperation.

5) (For rescheduling) Thank you very much for your cooperation. When would be a convenient time to call?__________

Whom shall I ask for?____

Thank you.

TELEPHONE INTERVIEW REPORT SHEET

Preliminary information

Occupational Area________________ OE CODE_____)
Business cluster area____________
Business Size category____________

Busy season Employment______________
Fulltime employment______________

JOB TITLE INFORMATION

JOB TITLES	order	employ	OTHER JOB TITLES	order	employ

CODING ONLY

1.____
2.____
3.____
4.____
5.____
6.____
7.____
8.____
9.____
10.____
11.____
12.____
13.____
14.____
15.____
16.____
17.____
18.____
19.____
20.____
21.____
22.____
23.____
24.____
25.____
26.____
27.____
28.____
29.____
30.____
31.____
32.____
33.____
34.____
35.____
36.____
37.____
38.____
39.____
40.____
41.____

NOTES: RANK ORDER : #1= entry level position
#2= first advancement position
#3= skilled worker position
#4= management/owner position

Add the letter(H) for positions which high school graduates of Vo-Ag programs would enter.

APPENDIX E

OCCUPATIONAL MATRIX
OF
ILLINOIS HORTICULTURE INDUSTRY

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
horticulture	vegetable, fruit & flower grower	field-grown vegetables	owner/operator/vegetable grower/nursery laborer/ trimmer/sprayer/machine operator/driver/irrigation crew worker/ transplanter/planter/ harvester/seasonal laborer				
		berries & orchards	farmer(orchardist, berry grower)/supervisor of fruit farm/full-time farm-worker/pruner/ sprayer/seasonal labor (picker, packer)/ picking crew supervisor/ fruit harvest worker/ field hauler/assistant packing & sales manager/ packing supervisor/ farm machine operator/ row boss/forklift operator/grafter				
		field & greenhouse-grown farmer	grower(field or greenhouse)/office manager/ secretary/bookkeeper/ supervisor (greenhouse supervisor, range supervisor)/head grader/ grader/inspector				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
horticulture	vegetable, fruit & flower growers	field & greenhouse-grown flowers	plant propagator/builder variety tester/full-time farm worker/ greenhouse worker/ seasonal greenhouse laborer/flower cutter/ flower packer/sales person/transplanter/ planter/mechanic				
		greenhouse-grown vegetables	owner/operator/grower/ transplanter/planter plant nutritionist/ harvester/part-time laborer/farm manager/ operations manager/ accountant/engineer mechanic/personnel manager/fresh pack supervisor/quality control superintendent/ agriculture manager/ functional supervisor/ case & spawn supervisor (mushrooms)/ case & spawn crew leader/ compost supervisor/ harvest superintendent/ room foreman (mushrooms) harvest crew leader/ harvester				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
		landscape architect	owner/landscape architect/landscape architect specialist: site planning specialist, education specialist, urban design specialist, park & recreation specialist, master management (state), historic site specialist, landscape specialist, landscape drafter, sales person				
	landscape	landscape contractor	owner/manager/landscape architect/landscape designer/propagator/assistant propagator/apprentice propagator/internship students/bookkeeper/supervisor/sales manager/laborer/landscape crew worker/nursery crew worker/salesperson/stock person				
	landscape	plant rental service	grower/plant service manager/plant service supervisor/plant service worker/installation driver/plant prep employee/greenhouse worker				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
horticulture	nursery & greenhouse production & woody plant maintenance	wholesale nurseries	grower/owner/supervisor/nursery crew supervisor/harvest crew supervisor/loading supervisor/full-time nursery worker/greenhouse worker/seasonal laborer/harvest crew worker/tree pruner/tree pruner helper				
		wholesale greenhouses	owner/manager/grower/full-time worker (experienced & inexperienced)/seasonal laborer/tractor driver/assistant grower/designer/sales manager/ sales person				
horticulture	nursery & greenhouse production & woody plant maintenance	tree seed gathering & extracting services	conservation resources manager/conservation resources assistant #2/resources assistant #1/natural resources extension agent/nursery supervisor/part-time laborers/full-time nursery crew workers/secretary				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Nursery and Greenhouse production and woody plant maintenance	Tree service	Owner Supervisor/chief forester/ Assistant chief forester/Tree surgeon/tree climber/ Forester/Tree surgeon helper/apprentice climber/ groundworker/ Sprayer/ Tree feeder				
		Sod farms	Owner/grower/manager Assistant manager Labor Maintenance supervisor Irrigator Sod cutter/harvest crew Delivery truck driver Harvest machine operator -dehydration operator, assistant dehydration operator, etc. Bookkeeper/secretary Turf research technicia Turf supply sales perso				
		Sod farms, Vegetable plants Bedding plants	Owner/grower Production manager Supervisor Greenhouse supervisor Full-time farmworker Seasonal laborer				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Nursery & greenhouse production and woody plant maintenance	Seed farms, vegetable plants, bedding plants	Plant breeder/Variety tester Plant propagator Wholesale manager Packer/seed packages Mechanic Office supervisor Secretary Switchboard operator Order editor/clerk Sales clerk				
	Retail Nurseries	Independent retail nursuries	Owner/manager Nursery manager Garden center manager Salesperson Mail order clerk Floral designer Inventory manager Landscape architect Landscape gardener/designer Landscape crew supervisor Nursery worker Greenhouse worker				
		Dept. store & discount chain garden centers	Garden center manager sales clerk				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Wholesale and Retail Florist	Wholesale fruit markets	Owner/manager Operation manager Payroll clerk Inventory control/ controller Buyer/purchasing agent Grader Warehouse worker/ checker/hustler Cashier Delivery driver Freight clerk Computer operator Keypunch operator Credit manager Sales manager Sales representative Sales order department Telephone operator Receptionist General office worker Maintenance supervisor Truck maintenance Security				
		Fruit stands, Retail	Owner/manager Manager Assistant manager Produce manager Produce clerk Checkout/cashier Bookkeeper Delivery person				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Wholesale and Retail florist	Wholesale florist	Wholesale florist Manager Accountant Salesperson (in-house, field) Shipping clerk Delivery person Sales manager Packers Inventory control and purchasing Word processing specialist Warehouse crew worker Mechanic Flower cutter, florist shop/"Jenny hand"				
		Retail florists	Florist Flowershop manager Secretary Accountant Head designer Cutflower designer Wedding consultant Decorator florist Florist supply salesperson Delivery person Assistant manager Manager trainees Flower cutter				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Wholesale and Retail florist	Retail florists (continued)	Marketing Porter Stockpersons Security				
	Turf & Grounds Maintenance	Golf course maintenance	Owner Greens superintendent Greenskeeper 2 Greenskeeper 1 Mechanic				
		Lawn & garden Services	Owner/manager Manager Full-time turf worker/applicator Seasonal turf worker Mower-tiller-snow remover (yard person) Turf consultant Turf research technician Turf supply salesperson Straw mulcher Tractor driver (disc & seed) Hauler				
		Public garden maintenance	Assistant manager/grounds Gardener Grounds supervisor Senior lead groundskeeper				

INDUSTRY	BUSINESS AREA	BUSINESS TYPE	JOB TITLES	ALL TASKS	TASKS COMMON TO BUSINESS TYPE	TASKS COMMON TO BUSINESS AREA	TASKS COMMON TO INDUSTRY
Horticulture	Turf & Grounds maintenance	Public garden maintenance (continued)	Lead groundskeeper Assistant lead groundskeeper Senior groundskeeper Assistant groundskeeper Groundskeeper II/ Groundskeeper Lead seasonal groundskeeper Assistant seasonal groundskeeper Seasonal groundskeeper/ Groundskeeper I Assistant seasonal groundskeeper				

APPENDIX F

PURPOSIVE STUDY INTERVIEW FORMS

College of Agriculture
Southern Illinois University
Carbondale, Illinois 62901

Task Analysis of Floral Shop

General Information

1. Name of business ______________________________

2. Address ______________________________
(street) (city)

____
(telephone) (person contacted)

3. Number of Employees

	Full time	Part time	Seasonal
Design	________	________	________
Sales	________	________	________
Bookkeeping/Office	________	________	________
Delivery/Maintenance	________	________	________

4. Total Number of New Employees hired in 1977 to fill vacated and/or new employees

Design	________
Sales	________
Bookkeeping/Office	________
Delivery/Maintenance	________
Other titles	________

OPTIONAL

5. Range of Incomes of Employees

Design	________
Sales	________
Bookkeeping/Office	________
Delivery/Maintenance	________

Coding

1.____
2.____
3.____
4.____
5.____
6.____
7.____
8.____
9.____
10.____
11.____
12.____
13.____
14.____
15.____
16.____
17.____
18.____
19.____
20.____
21.____
22.____
23.____
24.____
25.____
26.____
27.____
28.____
29.____
30.____
31.____
32.____
33.____
34.____
35.____
36.____
37.____
38.____
39.____
40.____

KEY

D-Daily B-Performed by beginning employees
W-Weekly A-Performed by advanced employees
M-Monthly M-Performed by manager
Y-Yearly O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	DESIGNER				
1001	Identify common flowers and foliage				
1002	Follow safety precautions				
1003	Design bud vase				
1004	Design hospital vase				
1005	Design simple corsage				
1006	Dress potted plants				
1007	Construct planters and terrariums				
1008	Write cards and lettering				
1009	Make bows				
1010	Give advise on care of cut flowers and foliage				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	DESIGNER				
1011	Select proper design for occasion				
1012	Select proper vase for design				
1013	Select proper flowers for vase, design, and occasion				
1014	Design advance style arrangements such as hospital and grandopening				
1015	Design advance corsage				
1016	Design centerpiece				
1017	Design funeral basket				
1018	Design dried, silk, and other permanent flower arrangements				
1019	Identify dried materials				
1020	Design fruit basket arrangement				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	DESIGNER				
1021	Design fruit basket arrangement				
1022	Design wedding boquet				
1023	Set up weddings				
1024	Plan and organize work activities				

KEY

D-Daily B-Performed by beginning employees
W-Weekly A-Performed by advanced employees
M-Monthly M-Performed by manager
Y-Yearly O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	SALES				
1025	Identify flowers and foliage				
1026	Identify foliage plants				
1027	Operate cash register				
1028	Sell floral product				
1029	Use telephone to accept and send customers' orders				
1030	Give information				
1031	Give cost estimates of flowers and plants				
1032	Wrap products sold				
1033	Stock shelves				
1034	Identify customers' needs and wants				

KEY

D-Daily B-Performed by beginning employees
W-Weekly A-Performed by advanced employees
M-Monthly M-Performed by manager
Y-Yearly O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	SALES				
1035	Give information on care of plants and cut flowers				
1036	Establish and maintain display areas				
1037	Set up display window				
1038	Ship and deliver merchandise				
1039	Identify plant insect and disease infestations				
1040	Price merchandise				
1041	Use credit systems of payment				
1042	Give estimates on funerals and weddings				
1043	Explain and demonstrate accesory items				
1044	Order merchandise				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	SALES				
1045	Prepare advertising material				
1046	Keep current inventory				
1047	Check invoices of received merchandise				
1048	Take annual inventory for sales				
1049	Keep price lists and catalogs current				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	DELIVERY AND MAINTENANCE				
1050	Deliver orders				
1051	Keep work and delivery area neat and clean				
1052	Light maintenance of delivery vehicle and building				
1053	Receive, handle, and care for cut flowers received from the wholesaler				
1054	Maintain tools and equipment				
1055	Clean cooler				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	BOOKKEEPING				
1056	Make daily sales report and analysis				
1057	Keep records of receipts and expenses				
1058	Complete and send in wire reports each month				
1059	Record outgoing wire orders in ledger				
1060	Check credit references of customers				
1061	Perform filing tasks				
1062	Keep employee work records				
1063	Prepare employee payroll				
1064	Send out bills on accounts receivable				
1065	Perform typing and mailing tasks				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	SALES				
1066	Pay accounts payable				
1067	Use adding machine and/or other tabulation device				
1068	Keep employee work records				
1069	Make out and send credit card reports				
1070	Keep customer credit records				
1071	Assist in record audits				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	MANAGER				
1072	Prepare income tax and other government reports				
1073	Keep annual depreciation schedule				
1074	Report and pay federal, state, and local taxes				
1075	Understand and comply with business laws				
1076	Administer social security and other employee benefit programs				
1077	Identify labor needs				
1078	Recruit employees				
1079	Interview and select employees				
1080	Designate employee work assignments				
1081	Supervise employees				

KEY

D-Daily	B-Performed by beginning employees
W-Weekly	A-Performed by advanced employees
M-Monthly	M-Performed by manager
Y-Yearly	O-Performed by owner
	M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	MANAGER				
1082	Train new employees				
1083	Evaluate employee performance				
1084	Perform personnel actions such as promoting and firing				
1085	Establish employee wages, hours, and working conditions				
1086	Determine business credit needs				
1087	Locate sources of, and secure credit				
1088	Determine need for, and purchase comprehensive business insurance				
1089	Select and purchase equipment and expendables not for sale				
1090	Determine kinds and amounts of flowers and plants to stock				
1091	Identify and select producers and suppliers and flowers, plants, and materials				

KEY

D-Daily
W-Weekly
M-Monthly
Y-Yearly

B-Performed by beginning employees
A-Performed by advanced employees
M-Performed by manager
O-Performed by owner
M/O-Manager/owner

TASK NUMBER	TASK STATEMENTS FOR	Time D-W-M-Y	Importance B-A-M-O	Other comments (who performs the task)	Coding
	MANAGER				
1092	Establish and enforce safety regulations				
1093	Allocate monies in preparing working budget				
1094	Analyze the business enterprises on cost and return basis				
1095	Participate in horticulture trade organizations				
1096	Plan business advertising				
1097	Negotiate sales contracts				

APPENDIX G

STEERING COMMITTEE MATERIALS

AGENDA

HORTICULTURE CURRICULUM PROJECT

Friday May 12 3:00 p.m. Saline Room

SOUTHERN ILLINOIS UNIVERSITY

I. INTRODUCTION TO THE PROJECT JIM LEGACY

- Overall Project
- Phase One Objects
- Role of the Advisory Committee
- Introduction to Job Title Analysis

II. Explaination of the Job Title Analysis RUTH ALLIBAND

- Creation of the preliminary job title list
- Organization of job title clusters and business groups
- Addition of job titles,clusters and business groups by the committee
- Telephone interview format and field test results
- Selection of telephone interviews

III. Explaination of the Retail Florist Interviews AMY SWIGART
SHERYL GUILDENHAUR

- Development of the task list and interview form
- Selection of interview sites
- Report on field test interviews
-
-
-

IV. SUMMARY JIM LEGACY

- Results of todays meeting
- Purpose of the next meeting
- Schedule time for next meeting
- Complete SIU forms for expenses

AGENDA

AGRICULTURAL OCCUPATIONS CURRICULUM DEVELOPMENT

Thursday June 15, 2:00 p.m. Student Center

SOUTHERN ILLINOIS UNIVERSITY

I.	INTRODUCTION TO THE PROJECT	JIM LEGACY
	- Overall Project	
	- Phase One Objectives	
II.	EXPLANATION OF THE JOB TITLE ANALYSIS	RUTH ALLIBAND
	- Overview of Job Title Clusters and Business Groups	
	- Report on Interviews	
	- Report on Interview Data Summary	
	- Horticulture Matrix Publication	
III.	EXPLANATION OF THE RETAIL FLORIST INTERVIEWS	AMY SWIGART SHERYL GUILDENHAUR FLOYD BENNETT
	- Review of the Task List and Interview Form	
	- Report on Interviews	
	- Summary of Interview Data	
	- Missing Link - (Knowledge Analysis)	
	- Comparison of Interview and Mailed Data Collection	
IV.	PHASE II	JIM LEGACY
	- Methodology (Progress)	
	- Curriculum (Products)	

March 27, 1978

TO: Sheryl Guildenhaur
Wisely Florists
Carbondale, Il. 62901

SUBJECT: Advisory Council, Job Titles in Horticulture Project

As of our conversation, we welcome you to our panel of advisors for this phase of our high school curriculum development project, which is to identify all job titles available in horticulture in Illinois.

We should have our list prepared and ready for advisement by the panel around June 11, at which time we will be contacting you. If you have any questions or wish to contact us before this date, our phone number is 453-2421. We appreciate your coming to our aid.

Sincerely,

James Legacy
Assistant Professor

Ruth Allihand
Graduate Assistant

RA/hcd

COPY

Southern Illinois
University at Carbondale
Carbondale, Illinois 62901

May 2, 1978

To:

Subject: Horticulture Project Orientation Meeting

This is a short note to confirm the orientation meeting for the advisory council of the Ag Industries Horticulture Project has been scheduled for May 12 at 3:00 p.m., to be held in the Saline Room at the Student Center.

We hope to see you there.

Sincerely,

Jim Legacy

James Legacy

Ruth Alliband
Sheryl Guildenhaur
Graduate Assistants

RA/as

May 30, 1978

Mr. Bernard Colvis
Colvis Orchards
R. R. #2, Box 374
Chester, IL 62233

Dear Mr. Colvis:

This is to announce our second (and final) advisory council meeting for the Ag Industries horticulture project. We are scheduling it for Thursday, June 15, at 2:00 p.m. in the Wabash Room at the Student Center. We will be presenting an overview of the survey work we've done, subject to corrections and additions by the committee. We hope to see you there.

Sincerely,

James Legacy, Assistant Professor

Ruth Alliband, Cheryl Guildenhaur, Amy Swigart,
Research Assistants

hcd

COPY

same letter to Rodney Anderson
Anna Nursery Co.
615 S. Main
Anna, IL 62906

Allan Utech
IOE-AVTE, OCS
100 N. First St.
Springfield, IL. 62777

J. W. Courter
U. of I. Experiment Sta.
Simpson, IL 62985

Tom Rapp
Beck Area Vocational Ctr.
R. R. #3
Red Bud, IL 62278